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Draft Environmental Impact Statement (DEIS) and Section 4(f) Evaluation
US-95 Thorncreek Road to Moscow

Milepost 337.67 to Milepost 344.00; Latah County, Idaho
Project No. DHP-NH-4110(156); Key No 9294

Submitted Pursuant to:
40 CFR 1500-1508: 23 CFR 771: 49 USC 303: 23 USC 109(h); 23 USC 128; 23 USC 138
by
U.S. Department of Transportation (USDOT); Federal Highway Administration (FHWA)
and
Idaho Transportation Department (ITD)
and
Cooperating Agency
U.S. Army Corps of Engineers (USACE)

November 2012

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Abstract:
The US-95 Thorncreek Road to Moscow project is located in Latah County, Idaho. The project begins near Thorncreek Road (MP 337.67) and continues north for approximately 6.34 miles, ending at the South Fork Palouse River Bridge (MP 344.00). The purpose of this project is to improve the safety and capacity on this segment of US-95. This DEIS analyzes the benefits and effects of the No Action and three Action Alternatives (W-4, C-3 and E-2) on the natural and human environment.

Written comments on this DEIS are due by **February 23, 2013** and should be sent to:
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TECHNICAL REPORTS

The following technical reports were prepared to evaluate the existing conditions and alternative effects during the DEIS preparation. These reports are available electronically on the disc distributed with this DEIS document. Public viewing locations where hard copies of the DEIS and the technical reports may be reviewed are listed in Appendix 3. List of Agencies, Organizations and Persons Receiving the DEIS.

BIOLOGICAL ASSESSMENT TECHNICAL REPORT

- Biological Assessment, Thorncreek Road to Moscow Highway Construction Project (ITD 2007a)

COMMUNITY IMPACT TECHNICAL REPORTS

- Community Profile Update (HDR 2011a)
- Environmental Justice Update (HDR 2011b)
- Induced Development Update (HDR Engineering 2011c)
- Community Impact Assessment Update (HDR 2011d)
- Community Impact Assessment (HDR 2006)
- Community Profile & Induced Development (HDR 2005a)
- Environmental Justice (HDR 2005b)

CULTURAL RESOURCES TECHNICAL REPORTS

- Historic Resources Survey Update to An Historic Buildings/Structures Survey (Cardno-Entrix 2011)
- Cultural Resources Surveys; Short Report 898 (AHS 2006)
- An Historic Buildings/Structures Survey; Short Report 832 (Sharley 2005)

FARMLAND TECHNICAL REPORT

- Farmland Protection Policy Act (Haagen 2006)

FLOODPLAIN TECHNICAL REPORT

- Hydraulic Study for Affected Floodplains on Alternatives Carried Forward (ITD 2012b)

HAZARDOUS MATERIALS TECHNICAL REPORTS

- Phase I Database Inquiry 3134591.1s (EDR 2011)

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AASHTO	American Association of State Highway and Transportation Officials
acc/mvm	accidents per million vehicle miles
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
AIRFA	American Indian Religious Freedom Act
APE	Area of Potential Effect
BA	Biological Assessment
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CLOMR	Conditional Letter Of Map Revision
CO	Carbon monoxide
CO_2	Carbon dioxide
CRP	Conservation Reserve Program
CWA	Clean Water Act
dBA	A-weighted decibels
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	United States Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FINDS	Facility Index System
FPPA	Farmland Protection Policy Act
FR	Federal Register
ft	Feet
GHG	Greenhouse Gas
GIS	Geographic Information System
GRP	Grassland Reserve Program
HAL	High Accident Location
HTF	Highway Trust Fund
I/F	Injury/Fatality

Acronym	Definition
ICDC	Idaho Conservation Data Center
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDT	Inter-disciplinary Team
IDWR	Idaho Department of Water Resources
ITD	Idaho Transportation Department
ITIP	Idaho Transportation Investment Program
Leq	Hourly-equivalent sound pressure levels
L_{eq}(h)	Hourly equivalent noise level in a-weighted decibels (dBA)
LIP	Landowner Incentives Program
LOMR	Letter Of Map Revision
LOS	Level of Service
LUST	Leaking Underground Storage Tank
LWCFA	Land and Water Conservation Fund Act
MAP-21	Moving Ahead for Progress in the 21st Century
MP	Milepost
mpg	miles per gallon
mph	miles per hour
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAFTA	North American Free Trade Agreement
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHS	National Highway System
NLCHD	North Latah County Highway District
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice Of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
PDO	Property Damage Only
PEM	Palustrine Emergent
PFO	Palustrine Forested
PFW	Partners for Fish and Wildlife
PM	Particulate Matter

Acronym	Definition
PSS	Palustrine Scrub-Shrub
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
ROW	Right-of-way
RV	Recreational Vehicle
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SH	State Highway
SHPO	State Historic Preservation Officer
STP	State Transportation Plan
SWPPP	Stormwater Pollution Prevention Plan
TDM	Transportation Demand Management
TEA-21	Transportation Equity Act for the 21st Century
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
TSM	Transportation System Management
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank
VMT	Vehicle Miles Traveled
WRIA	Water Resource Inventory Area

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EXECUTIVE SUMMARY

ES.1 Introduction

This document is being prepared to comply with the National Environmental Policy Act of 1969 (NEPA) as amended. This Draft Environmental Impact Statement (DEIS) provides the Federal Highway Administration (FHWA) and Idaho Transportation Department (ITD) with an analysis of the environmental effects so that informed choices can be made between reasonable alternatives. This DEIS creates numerous opportunities for agencies and the public to participate in the decision making process. It is also a public disclosure of the potential environmental effects of the project.

This Executive Summary provides general information regarding the proposed project and alternatives. This summary highlights key information from chapters of this DEIS to show how the alternatives compare to each other in their benefits and effects to the natural and human environment.

The US-95 Thorncreek Road to Moscow DEIS has been prepared in accordance with the FHWA Technical Advisory T 6640.8a Guidance for Preparing and Processing Environmental and Section 4(f) Documents (FHWA 1987) and FHWA and US Department of Transportation (USDOT) Right-of-way and Environment; Environmental Impact and Related Procedures [23 CFR 771].

ES.1.1 Project Background

In 1999, FHWA and ITD began developing an Environmental Assessment (EA) for a 20.4 mile improvement of US-95 from the Top of Lewiston Hill to Moscow. The project intent was to widen the existing highway in the southern 15.8 miles of the project and construct 4.6 miles of a new four-lane highway in the northern section. Eleven alternatives for the northern-most section of the corridor were narrowed to two. Alternative 6 would have widened along the existing highway and Alternative 10A would have constructed a four-lane highway on new alignment near the base of Paradise Ridge.

Alternative 10A was selected by ITD and FHWA and a Finding of No Significant Impact (FONSI) was issued in May 2002. The project was litigated by the Paradise Ridge Defense Coalition, Inc. in 2003. The US District Court for the District of Idaho (Court) in the judgment for Civil Case number 03-0156-S-BLW decided that the EA and issuance of a

FONSI were not appropriate. The court found that an Environmental Impact Statement (EIS) would be required for the northern 4.6 mile segment between Thorncreek Road and Moscow to allow full consideration of the impacts by the public and agencies. The southern 15.8 miles was allowed to proceed and construction was completed in October 2007. A Notice of Intent to prepare an EIS for the northern section was published in the Federal Register on November 13, 2003. See the DEIS, Chapter 1 Introduction for additional information.

ES.1.2 Project Location

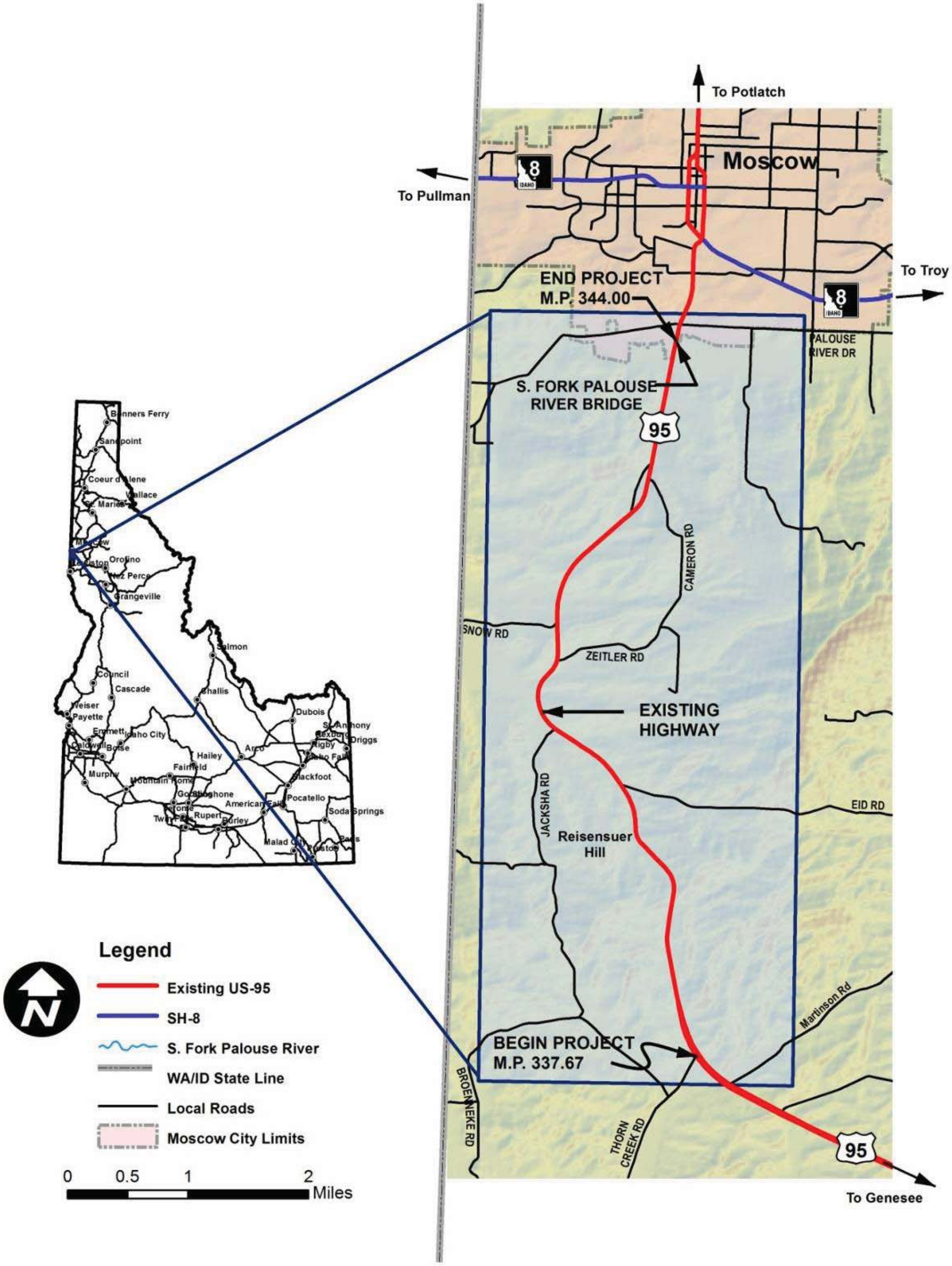
The project is located along US-95 south of the City of Moscow in Latah County, Idaho. The project begins at Thorncreek Road (MP 337.67) and continues north for 6.34 miles, ending at the South Fork Palouse River Bridge (MP 344.00). This section of US-95 travels primarily through the rolling hills and agricultural fields of the Palouse Region. See Exhibit 1. Project Location Map.

US-95 is part of the National Highway System (NHS), a North America Free Trade Agreement (NAFTA) route spanning the United States from Canada to Mexico. Within Idaho, US-95 is classified as a principal arterial, providing the only continuous north-south highway connection between the Idaho Panhandle and the rest of the State. US-95 is a major route for commercial, residential, agricultural, and recreational travel through Idaho.

ES.2 Purpose and Need

The purpose of this project is to improve public safety and increase highway capacity on US-95 south of Moscow between Thorncreek Road (MP 337.67) and the South Fork Palouse River Bridge (MP 344.00). Within the project limits, US-95 does not meet current American Association of State Highway and Transportation Officials (AASHTO) Standards. Additional concerns include High Accident Locations (HALs) and insufficient highway capacity. The primary deficiencies of the roadway are described in detail in the DEIS, Chapter 1, Introduction and Section 3.9, Transportation.

Exhibit 1. Project Location Map



ES. 2.1 Need

Public Safety

Horizontal Curves and Vertical Grades. The existing highway has several horizontal curves and vertical grades that do not meet AASHTO standards. The crash statistics for the highway between 2001 and 2010 show that this section of US-95 averages 22.0 crashes per year and is expected to reach 24.8 crashes per year by 2017. This would equal a projected crash rate of 1.85 crashes per million vehicle miles (acc/mvm) which is greater than the 1.22 acc/mvm statewide average for similar two-lane arterials with similar average daily traffic (ADT) and terrain. As ADTs in this segment continue to increase and the two-lane highway reaches capacity, these conditions are expected to worsen.

Crashes. Three High Accident Locations (HALs) are located in the project limits. These segments have the highest crash rates in ITD District 2 and rank in the top 13 of Idaho State HALs. See Table 1. High Accident Locations (HALs).

Table 1. High Accident Locations (HALs)

Milepost Location on US-95	Idaho HAL Ranking
337.67 - 338.17	6
338.67 - 339.62	13
340.62 - 341.12	4

Access. There are 66 approaches (public, commercial and field approaches) in this 6.34 mile segment of US-95. The many approaches do not meet the ITD Access Control Policy and contribute to intersection related conflicts.

The north end of the project is the most densely populated area with the highest number of intersection related crashes. The southern end of the project has closely spaced approaches with curves which have also resulted in a high number of intersection related crashes.

Surface Conditions. In addition to the primary deficiencies, this section of US-95 has a substandard rating for the pavement surface. Both the surface roughness and the amount of cracking fall below the minimum standard indices used to determine acceptable pavement performance.

Highway Capacity

Capacity and Operating Conditions. The AASHTO standards and ITD Policy for capacity for a rural highway is a Level of Service (LOS) B. This segment of US-95 currently has a volume of 5364 ADT and is operating at a LOS C. This is considered a high density traffic flow with restricted movements and delays for short periods. By the 2037 design year, the volume for this segment of US-95 is projected to be 8524 ADT and would be operating at LOS D. This is at-capacity and would result in delays due to congestion.

Roadway Width. The existing roadway consists of two undivided 12-foot travel lanes with two foot shoulders. The clear zone and shoulder width, which are important elements for safety, vary throughout the corridor and do not meet the AASHTO standards[1]. This two-lane segment of US-95 is also a bottleneck for the four-lane highway at the northern and southern ends of the project.

ES.3 Proposed Solution

The proposed solution or "action" would be constructed to meet the AASHTO standards. The existing two-lane undivided highway from Thorncreek Road to the South Fork Palouse River Bridge would be replaced with a four-lane divided highway with a 34-foot median through the majority of the corridor. A four-lane highway with center turn lane, curb, gutter and sidewalk would be constructed at the northern end of the project. See Exhibit 2. Typical Section: Four-Lane Divided Highway and Exhibit 3. Typical Section: Four-lane Highway with Center Turn Lane and Curb, Gutter and Sidewalk. The elements of the proposed action are described in detail in Chapter 2, Alternatives.

Exhibit 2. Typical Section: Four-Lane Divided Highway

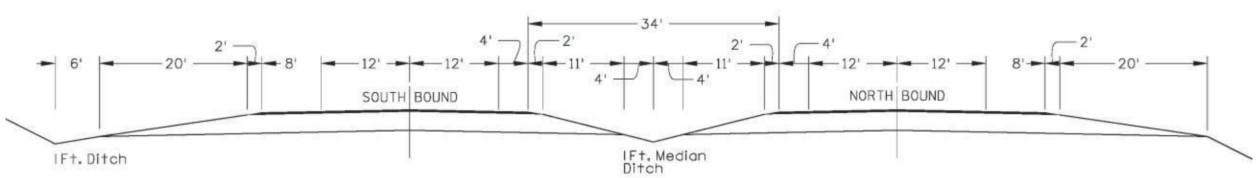
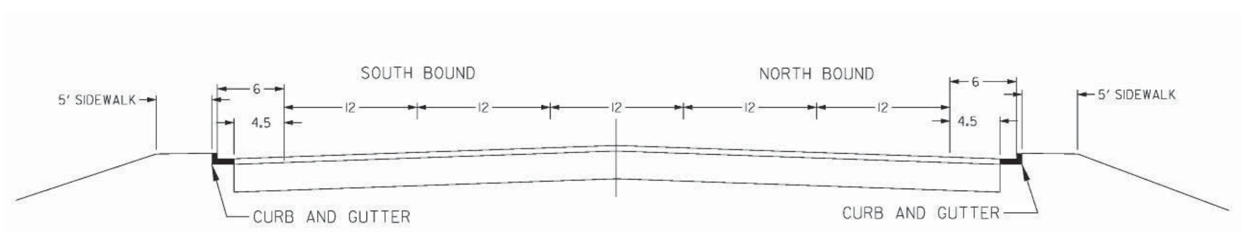


Exhibit 3. Typical Section: Four-lane Highway with Center Turn Lane and Curb, Gutter and Sidewalk



[1] AASHTO standards are outlined in the Roadside Design Guide 2011 (4th Edition).

The highway would be designed to meet the capacity and safety needs for the 2037 design year. It would be designed to include the following:

- *Lanes* – Four travel lanes with a 34-foot median, four-foot wide shoulders on the left and eight-foot paved shoulder on the right, would transition to four travel lanes with a continuous 12-foot center turn lane and six-foot shoulders, curb, gutter and a five-foot wide sidewalk. This would match the existing US-95 cross sections at the South Fork Palouse River Bridge and south of Thorncreek Road.
- *Speed Limit* – The posted speed would be 65 mph for the four-lane divided highway section. It would be 45 mph for the area with a four-lane highway with center turn lane, curb, gutter, and sidewalk at the north end of the project.
- *Turn lanes* - Right and left turn lanes would be constructed at all county road intersections.
- *Stormwater* – In the rural sections, a minimum one-foot deep, V-shaped ditch would be located on either side of the roadway in cut sections and in the center median. The urban section would have curbs and gutters and would be treated in accordance with applicable state and federal laws. A Stormwater Pollution Prevention Plan (SWPPP) would be developed and implemented to comply with the Construction General Permit (CGP). Stormwater in this area would be collected and managed with temporary and permanent Best Management Practices (BMPs) such as grassy swales and check-dams, in order to meet the requirements of the CGP and Total Maximum Daily Loads (TMDLs).
- *Access* – Type IV limited access control would be applied to the highway. Existing approaches would be allowed to remain at locations where construction of joint access is not economically justified.
- *Clear zone* – The clear zone would be a minimum of 30 feet for the four-lane divided highway.
- *Vertical Grade* – The roadway would have a maximum of a five percent vertical grade.
- *Horizontal curve* – The roadway would have a 1,810 foot minimum radius at an eight percent superelevation, which is adequate for a design speed of 70 mph.

- *Stopping Sight distance*[2] - the stopping sight distance would be a minimum of 730 feet which is adequate for a design speed of 70 mph on level grades. This will increase or decrease depending on the grade.
- *LOS* – The LOS for the 2037 design year would be LOS A for the rural section with the four-lane divided highway and LOS B for the urban four-lane with center turn lane, curb, gutter and sidewalk.

Adding two-lanes in each direction would alleviate the bottleneck caused by the existing two-lane segment, improving the capacity and traffic flow safely. Improving the grades, curves, stopping sight distance, access control and clear zone widths to meet AASHTO standards would improve the safety and capacity of the highway. The proposed action would reduce the projected crash rate for this segment of US-95 by more than 50 percent.

ES.4 Alternatives Screening

NEPA requires that a range of reasonable alternatives, including a No Action Alternative, be evaluated in detail. The Council on Environmental Quality (CEQ) defines "reasonable alternatives" as those that are practicable or feasible from a technical and economic standpoint and those that achieve the project's purpose and need. The alternatives were developed in consideration of natural and social effects, engineering design considerations, and input from the public, agencies, and local elected officials. The alternatives were developed, evaluated and screened in two phases as summarized below. See the DEIS, Chapter 2, Alternatives and the Screening of Alternatives Technical Report for details.

Level One. The goal of the Level One screening process was to collect preliminary information and to evaluate broad transportation concepts. Early in the project scoping, traffic and safety data for the corridor was collected and analyzed. This information helped to identify the roadway deficiencies and to identify the project purpose and need.

In 2004 ITD conducted community interviews and implemented an extensive public involvement process to introduce the proposed project and obtain community input. See Chapter 7, Public Involvement and Agency Coordination. Key public and agency involvement opportunities have included the following:

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[2]Stopping sight distance on a roadway should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. The design speed for the proposed alternative is 70 mph for rural sections.

- An Interdisciplinary Team (IDT) was formed that included ITD, FHWA, US Army Corps of Engineers (USACE), Environmental Protection Agency (EPA), US Fish and Wildlife Service (USFWS), Idaho Department of Fish and Game (IDFG) and Idaho Department of Environmental Quality (IDEQ). They reviewed and provided comment on project information and technical reports and collaborated with FHWA and ITD on specific topics as needed.
- Monthly newsletters and monthly breakfast meetings featuring technical experts provided an opportunity for the public to learn about the project and to ask questions.
- A project website with project information and technical reports was used to inform and update the public during project development.
- Two-day public meetings and open houses were held in 2004, 2005 and 2006.
- A two-day public workshop for community members to review the range of alternatives and provide input was held in 2005.
- Postcard invitations were sent to all residents of Moscow and Genesee for key public involvement opportunities.
- A mobile project kiosk with project information and updates was placed at several public facilities in the area between November 2004 and June 2005.

Transportation concepts that were evaluated included the No Action, Action Alternative, Transportation System Management (TSM), Transportation Demand Management (TDM) and Mass Transit. The TSM, TDM and Mass Transit alternatives were not forwarded for further consideration because of the rural nature and low population density of the project area and because they would not address the safety deficiencies of the existing roadway and therefore would not address the purpose and need. The No Action and Action Alternatives were forwarded for further consideration.

Design elements to address the roadway deficiencies were evaluated and incorporated into typical sections for the Action Alternatives. See ES.3, Proposed Solution and Section 1.4, Purpose and Need.

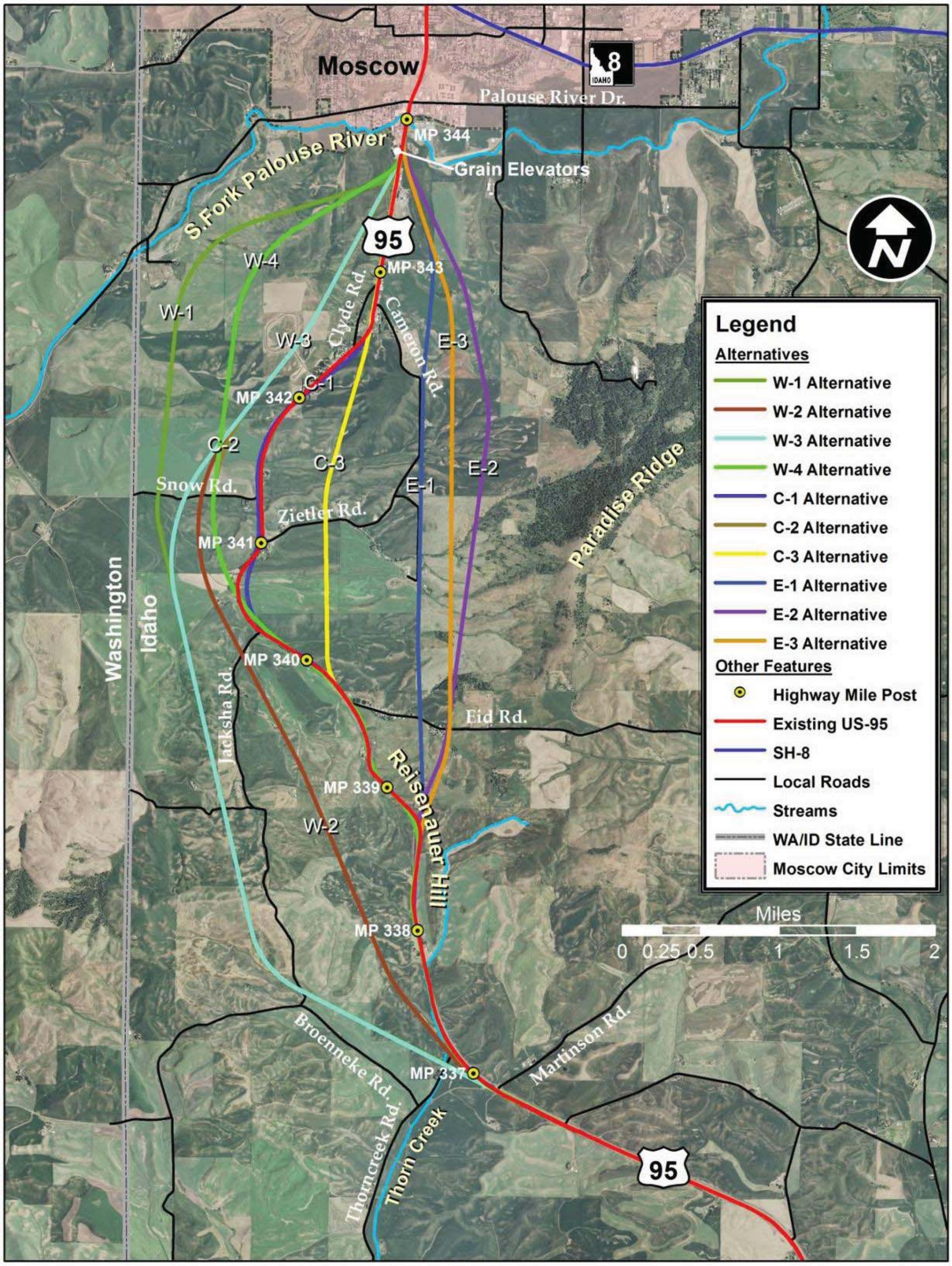
Level Two. The goal of the Level Two screening process was to identify a range of alternatives and to screen them. The No Action and 10 Action Alternatives were identified and categorized into the western, central and eastern corridors. These alternatives can be seen in Exhibit 4. Initial Alternatives.

One alternative from each corridor was forwarded for detailed analysis to give a range of alignment alternatives. Seven alternatives were eliminated from further consideration during the Level Two screening process. These alternatives were not advanced due to high adverse effects on the natural or built environment, less benefit compared to the other alternatives, or because they were similar to other alternatives that were advanced for detailed analysis. See Chapter 2, Alternatives, for detail regarding the screening process and rationale.

The alternatives' benefits and effects to the natural and human environments were evaluated and organized into a comparative spreadsheet. Criteria used to screen the alternatives are listed below.

- Air Quality
- Archaeological Sites
- Design Standards
- Displacements
- Environmental Justice
- Estimated Construction Cost
- Hazardous Materials
- Historic Sites
- Noise
- Plant Species and Communities of Concern
- Prime Farmland
- Regulatory Floodways and Floodplains
- Right-of-Way Acres
- Safety
- Socio-Economic
- State Sensitive Species
- Threatened and Endangered Species
- Ungulates
- Visual Analysis
- Water Quality
- Weather
- Wetlands and Tributaries

Exhibit 4. Initial Alternatives



ES.5 DEIS Alternatives

NEPA laws and regulations require that a No Action Alternative be considered in the range of reasonable alternatives. In addition to the No Action Alternative, three Action Alternatives were carried forward for detailed analysis in the DEIS; the W-4, C-3 and E-2 alternatives. See Exhibit 5. DEIS Alternatives. All three Action Alternatives were evaluated as described in ES.3, Proposed Solution.

No Action

The No Action Alternative would not involve any major improvements to US-95 but would include short-term minor restoration activities to the existing 6.34-mile segment. Improvements would include minor safety, paving and maintenance activities for the continued operation of the existing roadway. It would not involve improving or widening this segment of US-95 to meet AASHTO standards. The No Action Alternative provides a baseline for comparison of the other alternatives.

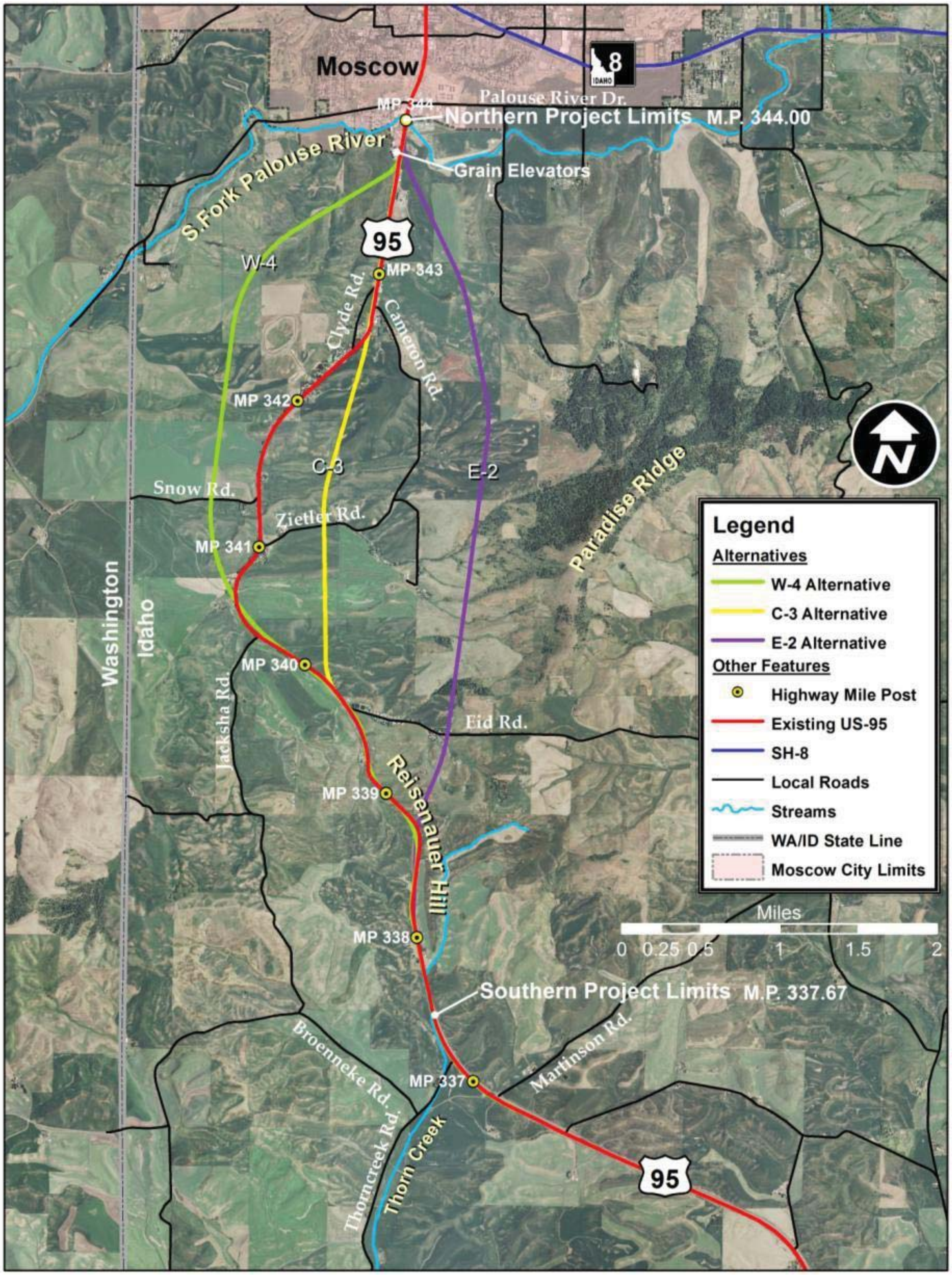
W-4

This alternative would be approximately 6.69 miles long. It would begin at Thorncreek Road and would closely follow existing US-95 between Thorncreek and Jacksha roads. The alignment would then shift west of existing US-95. W-4 would cross Snow Road, stay west of Clyde Hill and connect back into the existing US-95 near the grain elevators south of Moscow. Existing US-95 between Jacksha Road and the grain elevators (2.91 miles) may be turned over to the North Latah Highway District. See the Alignment Detail Exhibits 13-18 in Chapter 2, Alternatives for more detail.

C-3

This alternative would be approximately 5.94 miles long. It would begin at Thorncreek Road and would closely follow existing US-95 to just north of Eid Road. The alignment would then shift to the east of existing US-95 and cross Zeitler Road. C-3 would connect back into existing US-95 just south of Cameron Road, near Johnson Trucking. From Johnson Trucking north to the South Fork of Palouse River Bridge this alternative utilizes the existing alignment. Existing US-95 north of Eid Road to south of Cameron Road (2.71 miles) may be turned over to the North Latah Highway District. See the Alignment Detail Exhibits 13-18 in Chapter 2, Alternatives for more detail.

Exhibit 5. DEIS Alternatives



E-2 (Preferred Alternative)

This alternative would be approximately 5.85 miles long. It would begin at Thorncreek Road and would closely follow existing US-95 to the top of Reisenauer Hill where it would then shift to the east of existing US-95. The alignment would connect back into existing US-95 near the grain elevators south of Moscow. Existing US-95 from the top of Reisenauer Hill to the grain elevators (5.43 miles) may be turned over to the North Latah Highway District. This is FHWA and ITD's Preferred Alternative. See the Alignment Detail Exhibits 13-18 in Chapter 2, Alternatives for more detail.

ES.6 Alternative Benefits and Effects

Each of the four alternatives was analyzed for a full spectrum of environmental effects in compliance with 23 CFR 771 and T 6640.8a. The major differences between alternatives are summarized in Table 2. Summary of Alternatives' Benefits and Effects. See Chapter 4, Environmental Consequences and the respective technical reports for details regarding the resources and effects.

Table 2. Summary of Alternatives' Benefits and Effects

Resources	Alternatives			
	No Action	W-4	C-3	E-2
Predicted Crash Rate (crashes/yr)	24.8	9.3	10.9	7.7
Access Points	66	36	47	22
Residential Displacements	0	3	7	5
Residences within 300 ft of centerline		9	12	9
Business Displacements	0	0	8	0
Businesses within 300 ft of centerline		7	10	5
New Right-of-Way (acres)	0	210	154	207
Prime Farmland (acres)	0	46.7	25.1	50.8
Cultural/Section 4(f) Resources	0	1 Adverse Effect/Use	0	0
Floodplains (acres)	0	3.6	1.8	0
Wetlands (acres)	0	5.45	0.99	3.61
Tributaries – Number of Crossings/Linear feet of affected channel	0	9/5,517	5/7,808	5/2,592

Resources	Alternatives			
	No Action	W-4	C-3	E-2
Hazardous Material Sites	0	4	13 (1 Potential Hazardous Material Cleanup)	4
Noise Effects	9	0	1 (The impacted receptor is displaced)	7 (5 impacted receptors are displaced)
Construction /Total Cost(mil $)	0	52/62	43/58	46/55

No Action

The No Action Alternative would include minor safety and maintenance projects; however, the narrow roadway, curves and steep grades would still not meet AASHTO standards. With the projected increase in traffic volumes the crash rate for the No Action Alternative by 2017 is estimated to have 24.8 crashes per year. The No Action would have a LOS D by 2037 and would be substantially more congested than existing conditions.

The No Action Alternative would not require right-of-way acquisition. It would have some environmental effects such as uncollected and untreated stormwater, the highest noise impacts, and air quality degradation, and would have some minor environmental effects that would be determined during design but it would have the least overall effect. The No Action Alternative would have the worst safety and LOS compared to any of the Action Alternatives. It would not meet the project purpose and need.

W-4

W-4 is aligned west of existing US-95. W-4 would displace fewer residences than C-3 or E-2 and would have similar effects to hazardous materials compared to E-2. W-4 would have the greatest effects to wetlands, floodplains, and cultural/Section 4(f) resources. It would have the greatest number of tributary crossings and would require the greatest amount of new right-of-way. W-4 would not affect potential long-eared myotis, northern alligator lizard, and pygmy nuthatch habitat associated with ponderosa pine stands near Paradise Ridge. Of the alternatives, W-4 would be the least consistent with the land use plans.

C-3

The C-3 Alternative would run closest to the current highway and would utilize much of the existing US-95 alignment. It would have the highest crash rate of the Action Alternatives. The primary differences between the C-3 Alternative and the other Action Alternatives are that C-3 would require the least amount of new right-of-way compared to W-4 and E-2 but would have the greatest business displacements. Similar to E-2, C-3 would avoid cultural/Section 4(f) resources and would have the same number of tributary crossings. However, it would affect approximately three times the length of tributary channel compared to the E-2 Alternative. It would avoid the pine stands that are potential Pygmy nuthatch, northern alligator lizard, and long-eared myotis habitat similarly to W-4. C-3 would also have the least wetland effects. It would have the greatest effect to residences, businesses, and hazardous material sites.

E-2 (Preferred Alternative)

E-2 is aligned east of existing US-95. The primary advantages of E-2 are that it is aligned through flatter topography, has the fewest number of approaches, and has the greatest safety improvement compared to the other Action Alternatives. E-2 would affect the least amount of tributary channel and would avoid floodplains. Similarly to C-3, it would avoid cultural or Section 4(f) resources. The primary disadvantage of E-2 over the other alternatives is that it would be located closer to the base of Paradise Ridge and closer to moderate wildlife habitat. E-2 would affect pine stands that are potential long-eared myotis, northern alligator lizard and pygmy nuthatch habitat. It would also have the highest noise impacts of the action alternatives.

ES.7 Preferred Alternative

The evaluation of effects during the screening process and the detailed analyses presented in this DEIS resulted in the lead agencies, FHWA and ITD, identifying the E-2 Alternative as the Preferred Alternative. The final selection of an alternative will not be made until the alternatives' effects and comments on the DEIS from the public hearing have been fully evaluated. The E-2 Alternative is identified as the Preferred Alternative for the following reasons:

- It would have the greatest safety improvement.
- It would have the fewest access points and at-grade county intersections.
- It would have the least effect to streams.
- It would avoid effects to cultural/Section 4(f) resources, businesses and floodplains.
- It would have the shortest length with the shortest travel time.
- It would have better weather conditions for driving than W-4.
- It best meets the project purpose and need.

ES.8 Topics of Concern or Controversy

During the public and agency involvement processes, it became evident through repeated written and verbal comments, that there were specific concerns and controversy related to the following topics:

- Effects of the E-2 Alternative on Paradise Ridge including effects to the Palouse remnants, potential wildlife effects and mitigation for wildlife impacts
- Effects of weather on safety within corridors
- Visual impacts to Moscow residents

In response to public and agency concerns, FHWA and ITD prepared detailed studies on wildlife habitat, wildlife movement, weather, and visual quality. The results of the studies were shared through the extensive public involvement process and are considered in this DEIS.

Wildlife Habitat and Wildlife Movement. IDFG, EPA and USFWS prefer the C-3 Alternative to the E-2 Alternative. This is primarily due to the perceived effects of the E-2 Alternative on wildlife habitat and movement based on its proximity to Paradise Ridge. The primary reasons that C-3 was not identified as the Preferred Alternative is because it would have the highest crash rate with the greatest number of at-grade access points compared to the other Action Alternatives and would have the highest business and residential displacements (eight businesses and seven homes).

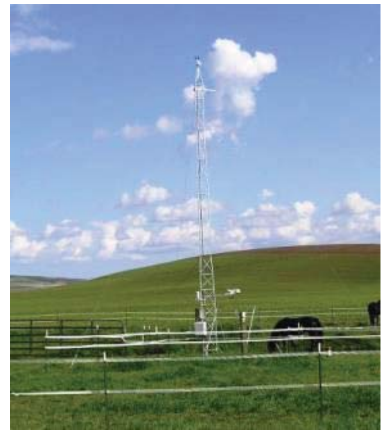
There has been disagreement between IDFG and ITD regarding appropriate mitigation for the direct and indirect effects for the conversion of primarily farmland that may be utilized by wildlife but would be converted to highway right-of-way. IDFG had prepared a wildlife assessment for the project (IDFG 2006) and provided mitigation recommendations for the direct and indirect effects of alternatives on wildlife and wildlife habitat. In 2007, ITD requested additional information regarding the basis for the recommendations and requested examples of similar mitigation projects. ITD also requested deer, elk and moose data to support the recommendations for wildlife crossing structures. While the specific data was not available, IDFG suggested that they could collect additional data and stated that other mitigation options could be explored. ITD and IDFG met to further discuss the proposed mitigation, with which ITD did not agree. In May 2007, IDFG provided correspondence which proposed eliminating the ratio-based habitat replacement and eliminating the crossing structures for big game because they were not necessary and might not be effective. Instead IDFG proposed that ITD deposit funds into a bank or trust, to be used to purchase easements, complete habitat improvements in the Palouse region, or other activities that would benefit wildlife in the Palouse Ecoregion. IDFG proposed $500,000 for W-4, $325,000 for C-3 and $750,000 for E-2 depending on the selected alignment alternative.

To further evaluate the alternative's effects and to assess the mitigation recommendations, ITD contracted wildlife experts to prepare additional studies. The wildlife experts provided and further evaluated baseline information regarding general wildlife occurrence, availability of suitable habitat for representative species and wildlife movement. They also provided expert opinions regarding the potential effects of the different alternatives on wildlife species. The studies concluded that wildlife species including ungulates, may utilize the project area which offers low to moderate quality habitat for wildlife. The eastern corridor has more suitable habitat than the central or western corridors. More suitable habitat is available north, south and east of the project area or concentrated in the gullies (Ruediger 2007).

In December 2010, ITD transmitted the findings to IDFG in a report titled *Assessment of Potential Big Game Impacts and Mitigation Associated with Highway Alternatives from Thorncreek Road to Moscow* (Sawyer 2010) which concluded that given the marginal quality habitat and limited observations of moose and elk in the area, there is no evidence that suggests the E-2 Alternative would have measureable impacts on either species. While high quality habitat for ungulates is not present in the project area, the E-2 alternative would have a greater effect on wildlife habitat than either W-4 or C-3. However, mitigation for direct habitat loss, indirect habitat loss, or loss of connectivity for moose or elk was not warranted. The report recommended future monitoring of wild animal crashes to determine whether future mitigation might be warranted in sections of E-2.

The wildlife and safety reports have been provided to the agencies and coordination will continue through the EIS process. In the summer of 2012, ITD and IDFG began preparation of a Memorandum of Understanding (MOU) to address mitigation for vegetation, fish and wildlife effects. See the DEIS, Section 4.8 Vegetation, Fish and Wildlife and Chapter 9. Environmental Commitments.

Weather Conditions. During the public meetings held from 2004 to 2006, weather as it pertained to safety was a major topic of concern. The public expressed concern that the topographic differences between the alternative corridors (west, central and east), could result in differing climatic conditions that could influence safety.



Weather Monitoring Station

To respond to this concern, a detailed weather analysis was developed that evaluated the differences in the weather in three corridors. The study measured wind speed, precipitation, snow, and road ice over the five month winter period. The study concluded that while there may be minor variations in climatic conditions in the corridors, they were not substantial. The improvement of the lane widths, clear zones, steep grades and curves are more influential factors to safety. Therefore, weather was considered when developing the design elements but will not be a major factor for comparing the alternatives. See Chapter 3, Affected Environment and Chapter 4, Environmental Consequences. Detail may also be found in the Weather Technical Report.

Visual. There are differing opinions regarding the visual effects of the W-4 and E-2 alternatives. The Citizens for a Safe Highway 95, claiming to represent people collectively owning 80 percent of the land along E-2, were in favor of the E-2 Alternative due to the "spectacular view" of the Palouse and of the City of Moscow for travelers. They believe that the beauty of Paradise Ridge could transform the highway into a gateway for Moscow, and that E-2 could promote and preserve the Palouse landscape through scenic highway status. The group opposed alternative W-4, stating that it would disrupt westerly views and promote farmland conversion disrupting the agricultural setting (HDR 2005a).

The Paradise Ridge Defense Coalition, who opposed the E-2 Alternative, felt the expansion of the roadway should follow the existing route as much as possible in order to minimize the ecological footprint of road. In the view of those opposed to an E-2 alignment, the ridge should remain untouched because it provides both aesthetic and environmental value as the last remaining natural prairie in the area (HDR 2006).

ES.9 Planned Projects

There are no other major transportation projects planned for the area. The Ring Road project is a planned loop around the City of Moscow that would permit through traffic on both US-95 and SH-8 to travel around the perimeter of the City. It is in a conceptual phase and no alignment has been proposed, nor is project funding identified. See Chapter 6, Indirect and Cumulative Effects and Community Profile - Induced Development Technical Reports for more information regarding planned developments.

ES.10 Permits and Approvals

If an Action Alternative is selected, the permits and approvals shown in Table 3. Permits and Approvals may be required. Additional requirements for each alternative are listed in Chapter 9, Environmental Commitments.

Table 3. Permits and Approvals

Agency	Permits and Approvals
FHWA	Prepare EIS and Record of Decision
USACE	Jurisdictional determination and Section 404 Permit
USACE	Section 404(b)(1) Guidelines
EPA	NPDES Construction General Permit
EPA	Notice of Demolition
IDEQ	401 Water Quality Certification
IDWR	Stream Channel Alteration Permit
Moscow/Latah County and FEMA	Floodplain No Rise Certification; Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR)

ES.11 Next Steps

FHWA and ITD have published this DEIS and made it available for a 45-day public comment period. After the comment period ends, a Final EIS (FEIS) will be prepared. The FEIS will address the substantive public comments, make any corrections and identify mitigation measures. The FEIS will be published and made available to the public for 30 days. FHWA will issue a Record of Decision (ROD) selecting an Action Alternative, a combination of the Action Alternatives, or the No Action Alternative. The ROD will also provide the rationale for the decision and identify mitigation measures. See Exhibit 6. Typical EIS Process Diagram.

Exhibit 6. Typical EIS Process Diagram

There are several ways you can submit your comments or learn more about the project. A public hearing will be held during the DEIS public comment period. At the hearing you may provide official written or oral testimony regarding the project. You may also make inquiries, provide formal comments during the 45-day DEIS comment period, or request special accommodations including translation through the contact below:

Adam Rush
Public Involvement Coordinator
ITD Office of Communications
3311 W. State Street, Boise, ID 83707
(208) 334-8119
adam.rush@itd.idaho.gov

In addition to the public involvement described in Chapter 7, Public Involvement and Agency Coordination, information regarding this project, including scheduled public hearing dates, will be posted and updated on www.itd.idaho.gov/Projects/D2/ and select "US-95 Thorncreek to Moscow Phase I".

1 INTRODUCTION

1.1 Background

In 1999, FHWA and ITD began developing an EA for a 20.4 mile improvement of US-95 from the Top of Lewiston Hill to Moscow. The project intent was to widen the existing highway in the southern 15.8 miles of the project and construct 4.6 miles of a new four-lane highway in the northern section. Eleven alternatives for the northern-most section of the corridor were narrowed to two. Alternative 6 would have widened along the existing highway and Alternative 10A would have constructed a four-lane highway on new alignment near the base of Paradise Ridge.

Alternative 10A was selected by ITD and FHWA and a FONSI was issued in May 2002. The project was litigated by the Paradise Ridge Defense Coalition, Inc. in 2003. The US District Court for the District of Idaho (Court) in the judgment for Civil Case number 03-0156-S-BLW decided that the EA and issuance of a Finding FONSI were not appropriate. The court found that an EIS would be required for the northern 4.6 mile segment between Thorncreek Road and Moscow to allow full consideration of the impacts by the public and agencies. The southern 15.8 miles was allowed to proceed and construction was completed in October 2007.

The Court decision for US-95 Lewiston Hill to Moscow was based on the finding that FHWA regulations give examples of actions that *normally* require an EIS, which includes a highway project of four or more lanes on a new location. Since the EA didn't discuss its unique circumstances, an EIS should have been prepared.

In an Idaho Department Fish and Game (IDFG) Draft Terrestrial Wildlife Impact report which was an appendix to the EA, IDFG characterized the diversity of plant and wildlife communities in Palouse remnants, explained its rarity and stated that the new highway would disturb habitat and result in fragmentation and disruption of wildlife movement. IDFG also stated that it is difficult to predict the extent of this long term impact but it is expected to be significant. Mitigation was recommended should the 10A alternative be selected. ITD did not follow the IDFG mitigation but pursued an alternative mitigation site. The Court ruled that because ITD chose not to follow the IDFG analysis and mitigation recommendations without relying on its own experts or explaining in the EA the unique or atypical circumstances that warranted proceeding in a different direction, that the EA raised substantial concerns regarding significant impact which was not resolved. Therefore, a FONSI was not appropriate and an EIS should be prepared.

An EIS is being prepared in response to the Court decision and in compliance with FHWA regulations. A Notice of Intent (NOI) to prepare an EIS for the section of US-95 between Thorncreek Road and Moscow was published in the Federal Register on November 13, 2003. An extensive public involvement process has been completed and will continue to be implemented to identify and continue to address public and agency concerns. The public scoping process resulted in the identification and screening of a range of reasonable alternatives. See Chapter 2, Alternatives and Chapter 7, Public Involvement and Agency Coordination.

During the development of this DEIS several technical reports were prepared to fully evaluate vegetation and wildlife resources and alternative effects. These reports were conducted by experts in the respective fields. The technical reports are summarized in Chapter 3, Affected Environment and Chapter 4, Environmental Consequences and are listed below:

General Wildlife Assessment, Thorncreek to Moscow (December 2006). This report describes the effects of the alternatives to key indicator species and representative species of greatest conservation need. It also discusses potential mitigation measures (IDFG 2006).

Biological Evaluation on the Potential Impacts of Corridor Alternatives from Thorncreek Road to Moscow on Large Ungulates (December 2005). This report evaluates the potential effects of alignments through different corridors (west, central and east) on the habitat and survival of white-tailed deer (*Odocoileus virginianus*), elk (*Cervus elaphus*), and moose (*Alces alces*) in the project area (Melquist 2005a).

Biological Evaluation on the Long-eared Myotis and Pygmy Nuthatch (December 2005). This report describes the potential effects of the proposed project on the long-eared myotis (*Myotis evotis*) and pygmy nuthatch (*Sitta pygmaea*) which were classified as Species of Special Concern (SSC) by the IDFG (Melquist 2005b).

Final Review of Wildlife Mitigation for the Thorncreek Road to Moscow Highway Development Project (US-95) (September 2007). This report reviews and summarizes the information in the General Wildlife Assessment (IDFG 2006) and Biological Evaluation on Potential Impacts of Corridor Alternatives (Melquist 2005a). It evaluates the effects of the alternatives to deer, elk and moose and makes mitigation recommendations (Ruediger 2007).

Assessment of Potential Big Game Effects and Mitigation Associated with Highway Alternatives from Thorncreek Road to Moscow (December 2010). This report summarizes the various wildlife reports prepared for the project and provides ITD with an independent assessment of the project's effects to potential big game. It also discusses mitigation (Sawyer 2010).

Biological Assessment, Thorncreek Road to Moscow Highway Construction Project (December 2007). This study describes the project effects to federally listed and proposed species and designated critical habitat (ITD 2007a). This report was reviewed in November 2011 and USFWS provided concurrence that the findings are still valid in 2007, 2011 and 2012.

A Scientific Evaluation for Noxious and Invasive Weeds of the Highway 95 Construction Project between the Uniontown Cutoff and Moscow, (January, 2007). This report describes the potential weeds in the study area. It also describes the potential for the proposed project to spread weeds and discusses mitigation for the potential effects (Lass and Prather 2007).

Biological Evaluation of Plant Species and Communities of Conservation Concern in the US Highway 95 Thorncreek Road to Moscow Project Area (December 2005). This report discusses the potential occurrence and extent of rare plants and communities in the project area. It analyzes the potential effects for the proposed project on plant species of conservation concern and remnant native plant communities that potentially provide habitat for these species (Lichthardt 2005).

Where ITD and FHWA disagreed with the assessment of effects to ungulates and general wildlife and proposed mitigation, recognized experts conducted additional studies to evaluate the effect and mitigation recommendations. The evaluations and findings were documented in the reports by Ruediger in 2007 and Sawyer in 2010. These reports were provided to IDFG. The report prepared by Sawyer was sent to IDFG in 2010 with a letter explaining the findings. In the summer of 2012, ITD and IDFG began preparation of a MOU to address mitigation for vegetation, fish and wildlife effects. See Appendix 1, Key Agency

Correspondence and Forms. See Section 4.8, Vegetation, Fish and Wildlife Effects and Section 4.9, Threatened and Endangered Species Effects and the respective technical reports for additional detail. The measures that ITD and FHWA plan to adopt to compensate for the identified resource effects are listed in Chapter 9, Environmental Commitments.

1.2 Setting

The project area is immediately south of the City of Moscow, Idaho. Moscow is the most populous city in the Palouse Region and is the Latah County seat. Moscow's primary employers are the University of Idaho in Moscow and Washington State University which is located five miles to the west in Pullman, Washington. Moscow also serves as the agricultural and commercial hub for the Palouse Region. The study area is primarily agricultural lands with scattered rural residences. The northern section of the project is within the southern boundary of the City of Moscow limits and is more urbanized with commercial and higher density residential development.

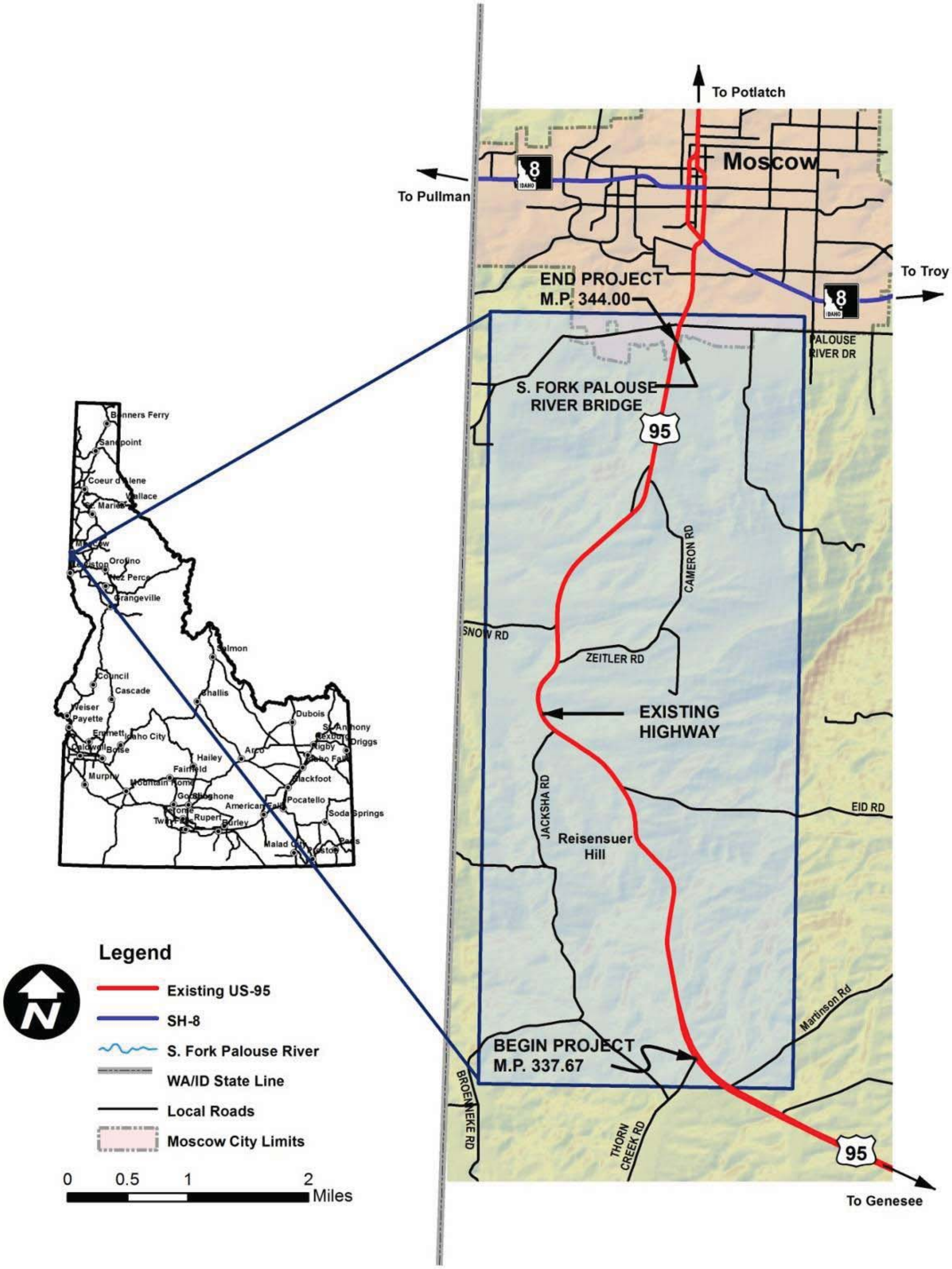
1.3 Project Location

The US-95 Thorncreek Road to Moscow Project is located south of Moscow, in Latah County, Idaho. The logical termini established for the project begins at Thorncreek Road (MP 337.67) and runs north to the South Fork Palouse River Bridge (MP 344.00). See Exhibit 7. Project Location.

1.4 Purpose

The purpose of this project is to improve public safety and increase highway capacity on US-95 south of Moscow between Thorncreek Road (MP 337.67) and the South Fork Palouse River Bridge (MP 344.00).

Exhibit 7. Project Location



1.5 Need

US-95 is part of the National Highway System (NHS) and is a North America Free Trade Agreement (NAFTA) route spanning the United States from Canada to Mexico. Within Idaho, US-95 is classified as a principal arterial, providing the only continuous north-south highway connection between the Idaho Panhandle and the rest of the state. It supports multiple local uses, including primary access to agricultural, residential, commercial and industrial land located directly adjacent to the highway. Within the City of Moscow, US-95 connects with SH-8 which is a major east-west highway. The US-95 Thorncreek to Moscow project is included in the approved Idaho Transportation Investment Program (ITIP) (ITD 2011a).

1.5.1 Public Safety

Horizontal Curves and Vertical Grades

The existing highway has several horizontal curves and vertical grades that do not meet AASHTO standards. The crash statistics for the highway between January 2002 and December 2011 show that this section of US-95 averages 22.0 crashes per year and is projected to reach 24.8 crashes per year by 2017, the anticipated year of construction completion. This would be a projected crash rate of 1.85 crashes per million vehicle miles (acc/mvm) which is greater than the 1.22 acc/mvm statewide averages for similar type highways on two-lane principal arterials with similar average daily traffic (ADTs) and terrain. Over half of the crashes in the corridor occurred between MP 338 and MP 342 and approximately half of those were associated with a horizontal curve in the road. The curves on this section of highway contribute to approximately nine accidents per year.

Access

There are 66 approaches (public, commercial and field approaches) in this 6.34 mile segment of US-95. The many approaches do not meet the ITD Access Control Policy and they contribute to intersection related conflicts. From 2002 to 2012, 22 crashes were directly associated with private approaches, or intersections (ITD 2012a).

The north end of the project is the most densely populated area with the highest number of intersection related crashes. The southern end of the project is primarily rural residences and farms with closely spaced approaches and curves that have also resulted in a high number of intersection related crashes.

Surface Conditions

In addition to the primary deficiencies, this section of US-95 has a substandard rating for the pavement surface. Both the surface roughness and the amount of cracking fall below the minimum standard indices used to determine acceptable pavement performance.

1.5.2 Highway Capacity

Capacity and Operations

This segment of US-95 currently has an ADT of 5364 and it currently operates at a Level of Service (LOS) C. This is considered a high density traffic flow with restricted movements and delays for short periods. The volume for this segment of US-95 is projected to be 8524 ADT by 2037 based on a two percent annual growth rate. It would operate at a LOS D in the 2037 design year. See Table 4. Existing and Projected ADTs.

Table 4. Existing and Projected ADTs

US-95 Segment (MP)	Existing 2010 (ADT)	Design Year 2037 (ADT)
337.2-337.7	4,900	7,809
337.7-339.6	4,900	7,821
339.6-342.9	5,300	8,437
342.9-344.1	6,500	10,221
Overall ADT - 337.2-344.1	5,364	8,524

This is at-capacity and would result in delays due to congestion. The traffic consists of approximately 5.7 percent heavy truck traffic and 94.3 percent passenger vehicles. The AASHTO standard for capacity for a rural highway is LOS B. See Exhibit 8. Level of Service (LOS).

Roadway Width

The existing roadway consists of two 12-foot undivided travel lanes with two foot shoulders. The clear zone and shoulder width, which are important elements for safety, vary throughout the corridor and do not meet AASHTO standards[3]. This two-lane segment of US-95 is a bottleneck for the four-lane highway at the northern and southern ends of the project. It experiences approximately one head-on collision per year. The proposed solutions to alleviate these deficiencies are described in Chapter 2, Alternatives, Section 2.4.2, Design Elements and Typical Section for Action Alternatives.

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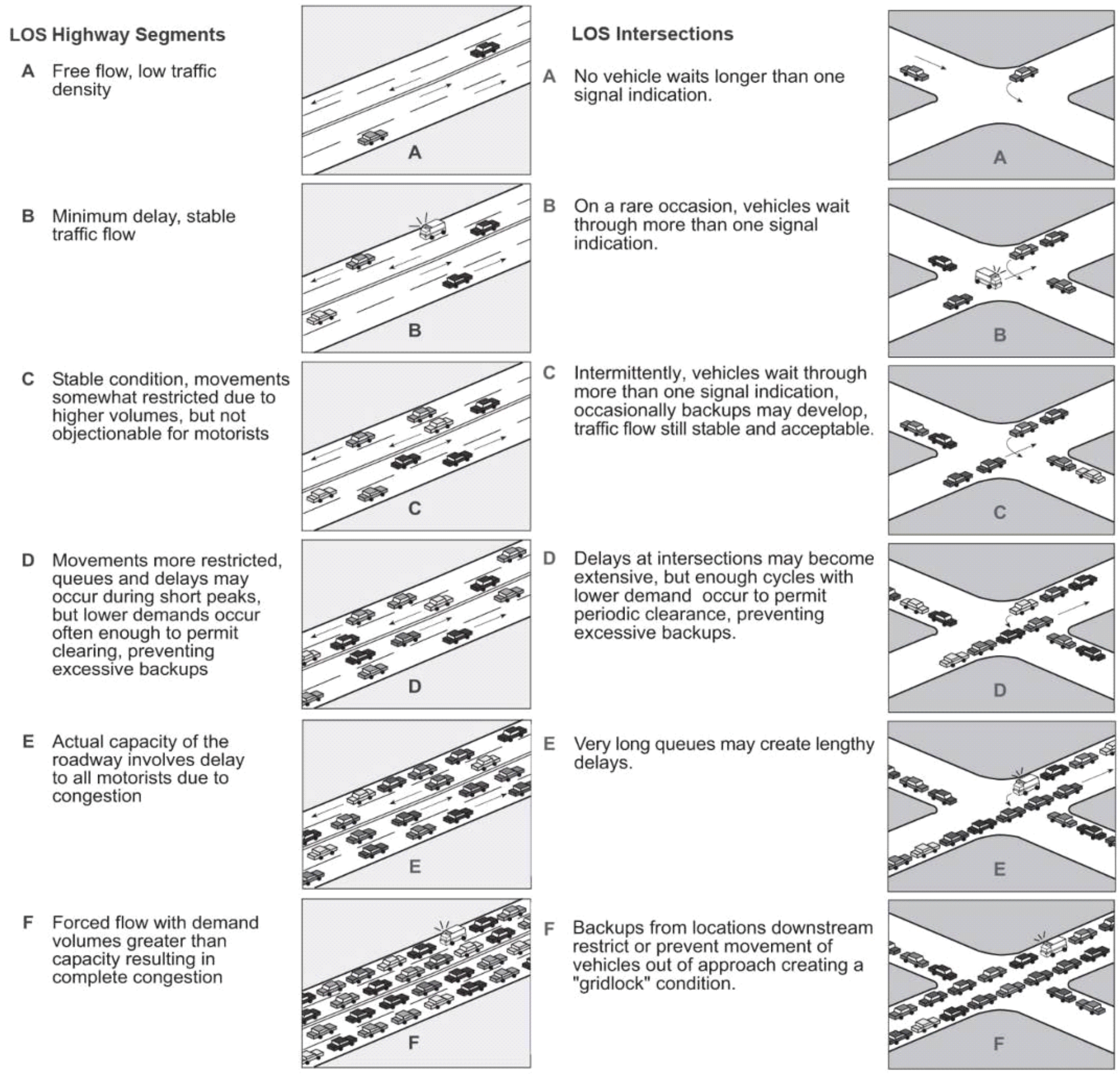
[3]AASHTO standards are outlined in the Roadside Design Guide 2011 (4th Edition)

Exhibit 8. Level of Service (LOS)



Note: Information in this diagram illustrates concepts from the Highway Capacity Manual 2000

1.6 Public Concerns

The following is a summary of the primary public concerns expressed during the scoping process, the public involvement effort and through public comment. See Chapter 7, Public Involvement and Agency Coordination for additional detail.

- Safety concerns due to curves that do not meet current AASHTO standards.
- Safety concerns due to weather
- Safety concerns due to steep approaches and grades
- Potential indirect effects to Paradise Ridge

- Wildlife habitat and wildlife movement effects (especially concerning weeds, pygmy nuthatch, Palouse giant earthworm, Palouse remnants, and ungulates)
- Construction timing
- Potential effects to wetlands, floodplains and tributaries
- Visual effects of E-2

1.7 Permits and Approvals

Table 5. Permits and Approvals list the permits and approvals that may be required to construct any of the Action Alternatives. Other required measures are listed by alternative in Chapter 9, Environmental Commitments.

Table 5. Permits and Approvals

Agency	Permits or Approvals
FHWA	Prepare EIS and Record of Decision
USACE	Jurisdictional determination and Section 404 Permit
USACE	Section 404(b)(1) Guidelines
EPA	NPDES Construction General Permit
EPA	Notice of Demolition
IDEQ	401 Water Quality Certification
IDWR	Stream Channel Alteration Permit
FEMA, Moscow and/or Latah County	Floodplain No Rise Certification; Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR)

1.8 Document Organization

This DEIS document is organized as follows:

DEIS Body

Chapter 1, Introduction provides a general background of the project and explains the purpose and need for the project. It describes the proposed action including design elements and lists required permits and approvals should an Action Alternative be selected.

Chapter 2, Alternatives describes how a range of reasonable alternatives was developed and screened. It describes the alternatives that were evaluated for detailed analysis in the DEIS and how the Preferred Alternative was identified.

Chapter 3, Affected Environment describes the regulatory framework and policies for resource protection and the methods used to evaluate the existing conditions and effects to resources.

Chapter 4, Environmental Consequences describes the benefits and effects of the No Action, W-4, C-3 and E-2 alternatives on the natural and human environment.

Chapter 5, Section 4(f) Evaluation describes the Section 4(f) resources that would be affected by the alternatives.

Chapter 6, Indirect and Cumulative Effects describes the indirect effects from the project that could occur at a time and place separate from the project. It also discusses the cumulative effects of the project in addition to past and reasonably foreseeable future projects, even if they are unrelated to the proposed project.

Chapter 7, Public Involvement and Agency Coordination describes the public involvement, agency consultations, and tribal coordination during the development of the DEIS.

Chapter 8, Construction Phasing and Funding describes how the proposed action would be funded and constructed.

Chapter 9, Environmental Commitments lists the measures implemented to avoid, minimize and compensate for the adverse effects of the alternatives on the natural and human environment.

Appendices

Appendix 1, Key Agency Correspondence and Forms-includes important letters and concurrence documents from agencies.

Appendix 2, List of Preparers and Reviewers –lists the primary authors and reviewers of the DEIS and technical reports as well as their experience and qualifications.

Appendix 3, List of Agencies, Organizations and Persons Receiving the DEIS -lists the agencies, organizations and persons to whom a copy of the DEIS was sent. It also lists locations where the DEIS may be viewed.

Appendix 4, Species of Greatest Conservation Need, Conservation Ranking Descriptions- describes the ranks and classifications for the Species of Greatest Conservation Need.

Technical reports

Many technical reports were prepared and updated as necessary during the development of this DEIS. The technical reports are referenced under Chapter 3, under the Methodology sections for each respective discipline and are also listed after the Table of Contents. These technical reports are available electronically on the disc distributed with this DEIS document. Public viewing locations where hard copies of the DEIS and the technical reports may be viewed are listed in Appendix 3, List of Agencies, Organizations and Persons Receiving the DEIS.

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2 ALTERNATIVES

This chapter describes the process used to identify and screen a range of reasonable alternatives. It presents the rationale used to eliminate alternatives from further consideration or to forward them for detailed analysis in this DEIS. It also compares the alternatives evaluated in the DEIS.

2.1 Regulatory Framework and Policies

The development and screening of alternatives under the NEPA are governed by the following:

- 40 CFR 1500-1508- NEPA regulation of Council on Environmental Quality (CEQ)
- 40 CFR 230-Section 404(b)(1)- Guidelines for Specification of Disposal Sites for Dredged or Fill Material
- 33 CFR 325 Appendix B-NEPA Implementation Procedures for the Regulatory Program
- 23 CFR 771 - FHWA Environmental Impact and Related Procedures
- Technical Advisory (TA) 6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents
- FHWA Environmental Guidebook

23 CFR 771.123(c) states that a DEIS shall evaluate all reasonable alternatives to the action and discuss the reasons why other alternatives, which may have been considered, were eliminated from detailed study.

2.2 Methodology

ITD and FHWA began the scoping process following the publication of the NOI on November 13, 2003. Public and agency input were used to develop a range of reasonable alternatives for consideration. The alternatives were developed and screened in two phases:

Level One involved identifying the logical termini, project purpose and need and evaluating broad transportation concepts and elements.

Level Two involved identifying a range of reasonable alternatives, analyzing alternative benefits and effects and completing a screening process. As a result of the screening process, four alternatives were forwarded for detailed analysis in the DEIS:

- No Action Alternative
- W-4 Alternative
- C-3 Alternative
- E-2 Alternative (Preferred Alternative)

The No Action Alternative is described in Section 2.4 Level One Screening and the three Action Alternatives (W-4, C-3 and E-2) are described in Section 2.5 Level Two Screening.

Public involvement has been a key factor for the identification and screening of the alternatives since the beginning of the project. Key public involvement activities and scoping efforts are summarized in Chapter 7, Public Involvement and Agency Coordination and the Screening of Alternatives Technical Report.

2.3 Logical Termini

The logical termini are the rational end points for a transportation improvement project and its resulting environmental effects [23 CFR 771.111(f)].

The US-95 Thorncreek Road to Moscow Project is located along US-95 south of Moscow, in Latah County, Idaho. The logical termini established for the project begins at Thorncreek Road (MP 337.67) and runs north to the South Fork Palouse River Bridge (MP 344.00). See Exhibit 1. Project Location Map. These logical termini will not restrict consideration of other reasonably foreseeable improvements.

The logical termini for the project were determined by the US District Court of Idaho's (Court) decision on the Environmental Assessment for the US-95 Lewiston Hill to Moscow project. This decision was based on identified safety issues, traffic volumes and roadway capacity. The Court in the judgment for Civil Case number 03-0156-S-BLW found that an EIS would be required for the northern 4.6 mile segment between Thorncreek Road and Moscow to allow full consideration of the impacts by the public and agencies. The southern 15.8 miles was allowed to proceed and construction was completed in October 2007. This southernmost project began at the Top of Lewiston Hill (MP 323.2) and ended at Thorncreek Road (MP 337.2).

The US-95 Thorncreek Road to Moscow project abuts the northern terminus of the constructed four-lane divided highway between the Top of Lewiston Hill and Thorncreek Road (MP 337.67) and the southern terminus of the South Fork Palouse River Bridge project (MP 344.00).

The segment of US-95 between Thorncreek Road and Moscow generates approximately 14 percent more traffic than US-95 between Genesee and Thorncreek Road. The change in traffic reflects the transition from agricultural to a higher density of commercial and residential use.

There were four times the number of injury and fatality crashes between Thorncreek Road and Moscow when compared to US-95 between the top of Lewiston Hill and Thorncreek Road (MP 323.36 to 337.67) between October 2007 and December 2011. During this time, thirty-one injury and fatality crashes occurred on the newly constructed four-lane divided highway between the top of Lewiston Hill and Thorncreek Road. This is 2.17 injuries and fatalities per centerline mile. During the same time period, 68 injury and fatality crashes have occurred between Thorncreek Road and Moscow (MP 337.67 to 344.00). This is 10.7 injuries and fatalities per centerline mile.

The Thorncreek Road to Moscow segment represents a change in topography from rolling hills to more mountainous terrain which contributes to the deficiencies in curvature and grade through the corridor.

2.4 Level One Screening

2.4.1 Transportation Concepts

The following transportation concepts were considered among the range of reasonable alternatives. The level one screening process is displayed in Table 6. Level One Screening Results and described below.

Table 6. Level One Screening Results

Alternative	Screening Results	Summary of Rationale for Eliminating or Forwarding Alternatives
No Action	Forwarded for detailed analysis	Required by NEPA to be evaluated with other alternatives. Minimal environmental effect.
TSM, TDM and Mass Transit	Eliminated	Rural area with less than 200,000 population density. Would not address safety deficiencies and would not meet purpose and need.
Action Alternatives-follow existing alignment or with short realignments	Forwarded for detailed analysis	Alternatives would be designed to meet purpose and need.
Action Alternatives on a new location	Forwarded for detailed analysis	Alternatives would be designed to meet purpose and need.

No Action Alternative. The No Action Alternative would include short-term minor restoration activities (safety and maintenance improvements, etc.) that maintain operation of the existing roadway. It would include projects such as turn lanes at public road approaches within the existing right-of-way, pavement overlays and seal coats to maintain the continuing operation of the existing roadway. The No Action Alternative serves as a baseline and is required by FHWA NEPA regulations to be considered in the DEIS. Therefore, this alternative was forwarded for further consideration.

Transportation System Management (TSM), Transportation Demand Management (TDM) and Mass Transit Alternatives. These alternatives could improve the efficiency of the existing system. TSM may include ridesharing, high-occupancy vehicle (HOV) lanes on existing roadways, and traffic signal timing optimization. TDM may provide travelers choices such as work location, route, time, and mode.

TSM and mass transit are required to be considered for major projects proposed in urbanized areas with populations over 200,000 (FHWA 1987). The area surrounding the US-95 Thorncreek Road to Moscow project is rural and does not meet the 200,000 population threshold even when considering the surrounding towns and cities.

The existing corridor between Thorncreek Road and Moscow does not have existing signalization that could be optimized. HOV lanes would not be effective as the primary issues related to the facility are related to safety and additional HOV lanes would not address the existing safety deficiencies. There are existing vanpool and rideshare systems in place in

Moscow and Lewiston. Mass transit in the form of shuttle buses have been implemented in the corridor in the past, but were discontinued due to low ridership and lack of funding. Mass transit would also not address the safety deficiencies within the project limits. Reconstruction of the existing facility under the TSM, TDM and Mass Transit Alternatives would not address safety deficiencies and would not meet the project purpose and need; therefore, these alternatives were eliminated from further consideration.

Action Alternatives. These include both improvements along the existing highway and alternatives in new locations that meet the project purpose and need. An alternative that follows the existing highway and alternatives with short sections of realignment were developed and forwarded for detailed analysis.

Action Alternatives were developed at a concept level for the US-95 Genesee to Moscow segment which was later divided into separate projects. Criteria used to evaluate the concept level alternatives included; safety/crash rates, highway capacity, level of service, public and agency input, functional classification of the roadway, and access control. Design elements that addressed the project purpose and need and met AASHTO standards were identified and incorporated into the typical section. See 2.5.1 Develop Alignment Alternatives for a description of the initial alternatives.

2.4.2 Design Elements and Typical Section for Action Alternatives

The proposed action would replace the existing two-lane undivided highway from Thorncreek Road to the South Fork Palouse River Bridge with a four-lane divided highway with a 34-foot median through the majority of the alignment. See Exhibit 9. Typical Section: Four-Lane Divided Highway. It would transition to a four-lane highway with a center turn lane, curb, gutter and sidewalk in the urban area just south of Moscow. See Exhibit 10. Typical Section: Four-lane Highway with Center Turn Lane, Curb, Gutter and Sidewalk. These typical sections would match the existing roadways at the northern and southern termini of the proposed project. Safety and maintaining consistency through the corridor were primary factors in determining the design standard and the typical section. The highway would be designed to meet capacity and safety needs for the 2037 design year and would meet AASHTO standards[4]. The primary design elements of the proposed action are summarized below.

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[4] FHWA has adopted AASHTO; *A Policy on Geometric Design of Highways and Streets* which outlines standards for new/reconstruction projects on the National Highway System.

Exhibit 9. Typical Section: Four-Lane Divided Highway

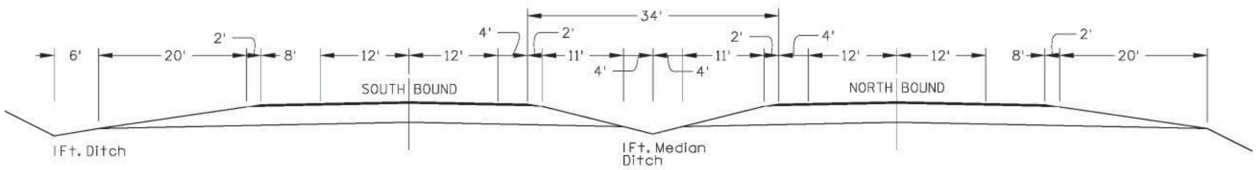
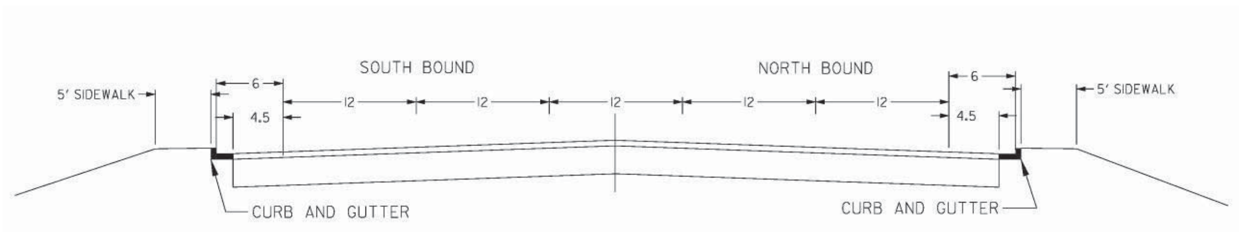


Exhibit 10. Typical Section: Four-lane Highway with Center Turn Lane, Curb, Gutter and Sidewalk



- *Speed Limit* – The posted speed would be 65 mph for the four-lane divided highway section. It would be 45 mph for the area with a four-lane highway with center turn lane, curb, gutter, and sidewalk at the north end of the project.
- *Lanes* – Four travel lanes with a 34-foot median, four-foot wide shoulders on the left and eight-foot paved shoulder on the right, would transition to four travel lanes with a continuous 12-foot center turn lane and six-foot shoulders, curb, gutter and a five-foot wide sidewalk. This would match the existing US-95 cross sections at the South Fork Palouse River Bridge and south of Thorncreek Road.
- *Turn lanes* – Left and right turn lanes would be constructed at all county road intersections except where overpass structures are specified.
- *Stormwater* – In the rural sections, a minimum one-foot deep, V-shaped ditch would be located on either side of the roadway in cut sections and in the center median. The urban section would have curbs and gutters and stormwater would be collected and treated in accordance with applicable laws and regulations. A SWPPP would be developed that would identify temporary and permanent BMPs such as grassy swales and check-dams to comply with the CGP and TMDLs.
- *Access* – Access control would be based on the facility type, functional classification, highway safety, vehicle operations, and preservation of highway utilities, zoning, and route consistency. Type IV, limited access control, would be applied to the highway. Existing approaches would be allowed to remain at locations where construction of

joint access is not economically justified. See Section 3.10 Transportation Effects for additional detail.

- *Clear zone* – The clear zone would be a minimum of 30 feet for the four-lane divided highway.
- *Vertical Grade* – The roadway would have a maximum of a five percent vertical grade.
- *Horizontal curve* – The roadway would have a 1,810 foot minimum radius at an eight percent super-elevation, which is adequate for a design speed of 70 mph.
- *Stopping sight distance*[5] – The stopping sight distance would be a minimum of 730 feet which is adequate for a design speed of 70 mph on level grades. This will increase or decrease depending on the grade.
- *LOS* – The LOS for the 2037 design year would be LOS A for the rural section with the four-lane divided highway and LOS B for the urban four-lane section with center turn lane, curb, gutter and sidewalk.

Adding one lane in each direction would alleviate the bottleneck caused by the existing two-lane segment and would match the lanes in the northern and southern roadway segments. This would improve the capacity, traffic flow, and reduce driver frustration with delays. Improving the grades, curves, stopping sight distance, access control and clear zone widths to meet AASHTO standards would improve the safety and capacity of the highway. Any of the proposed Action Alternatives would reduce the projected crash rate for this segment of US-95 by more than 50 percent.

2.5 Level Two Screening

2.5.1 Develop Alignment Alternatives

An initial range of alternatives that included the No Action and five Action Alternatives; W-1, W-2, C-1, E-1 and E-2, was developed based on the results of the preliminary engineering, environmental studies and public input. The Action Alternatives were categorized and named based on their locations in the west, central or east corridors. The alternatives were presented to the public during alternative workshops on January 19-20, 2005 and April 13, 2005. The purpose of the workshops was to present a range of possible alternatives to the public and to solicit public input. As a result of the alternative workshops, five additional alternatives were developed: W-3, W-4, C-2, C-3, and E-3. The No Action

[5] [5]Stopping sight distance on a roadway should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. The design speed for the proposed alternative is 70 mph for rural sections.

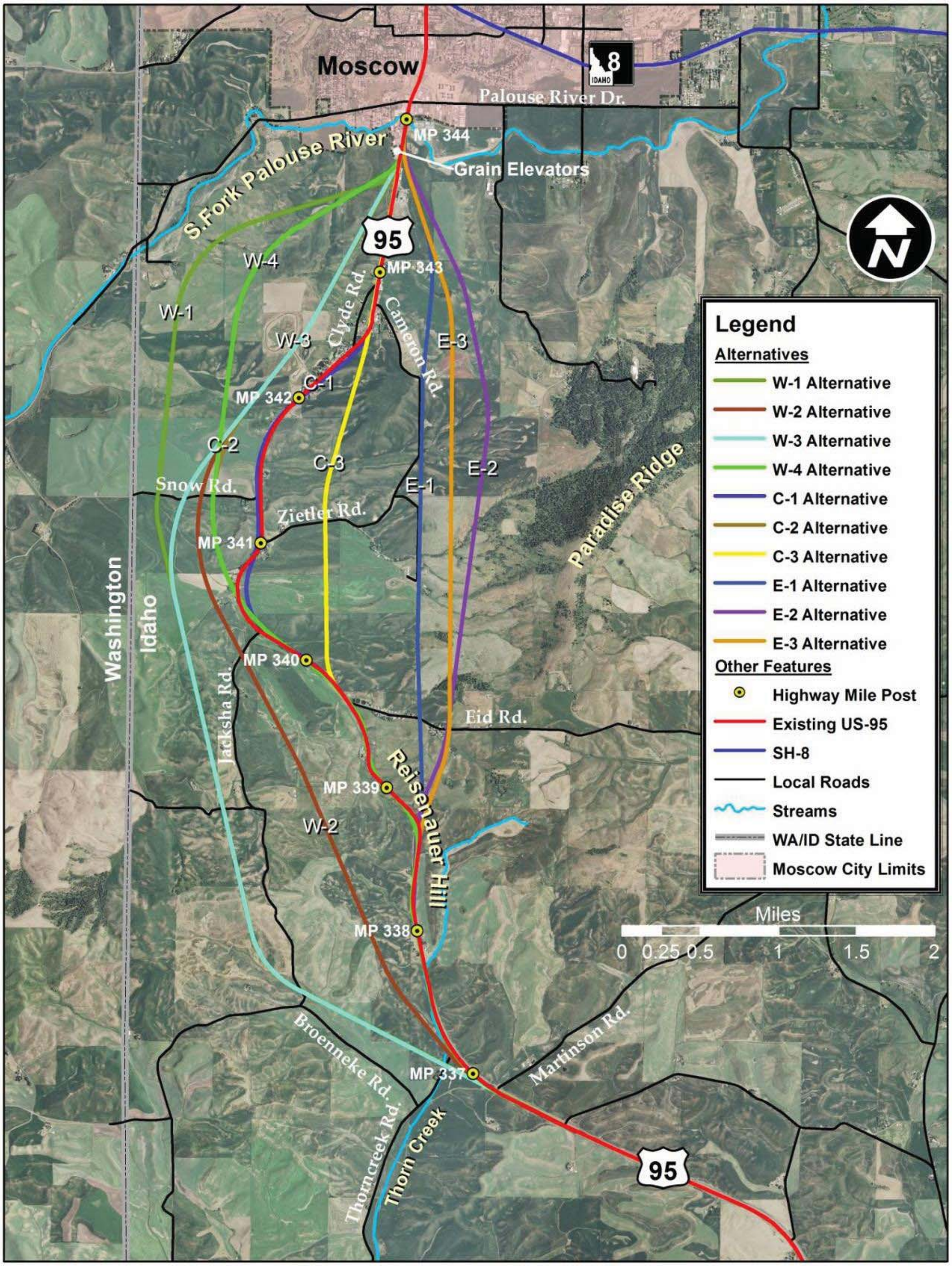
and ten Action Alternatives were presented in subsequent public meetings on January 18 and 19, 2006.

The Action Alternatives would share the same design elements described above under 2.4.2 Design Elements and Typical Section for Action Alternatives. They would all construct a four-lane highway with Type IV limited access control, improve horizontal curves and vertical grades, and be designed to meet the ITD Design Manual and AASHTO standards. Each alternative would transition from the four-lane divided highway to a four-lane highway with center turn lane, curb, gutter and sidewalk where they reconnect with existing US-95 at the northern end of the project. At the transition the posted speed limit would be reduced from 65 mph to 45 mph. With the exception of Alternative C-1, which uses most of the existing highway alignment, the abandoned sections of existing US-95 may be turned over to the North Latah Highway District. It should be noted that the lengths of the W-4, C-3 and E-2 alternatives early in the screening process differ from the lengths analyzed in this DEIS due to a modification of the project limits. As a result, the lengths and calculations presented during the screening process may differ from those presented in this DEIS for the W-4, C-3 and E-2 alternatives. The initial 10 Action Alternatives are shown in Exhibit 11. Initial Alternatives, and described below.

Western Corridor

W-1 would be approximately 8.2 miles long. It would begin just south of Thorncreek Road and would be aligned east of Broenneke Road on its southern end. As the alignment continues north it would then shift west of Jacksha Road. W-1 would reconnect to existing US-95 near the grain elevators south of the South Fork Palouse River Bridge. Overpass structures would be constructed over Jacksha Road, an unnamed private road, and Snow Road approximately 1,000 feet east of the Idaho/Washington State line.

Exhibit 11. Initial Alternatives



W-2 would be approximately 7.3 miles long. It would begin just south of Thorncreek Road and would be aligned just east of Broenneke and Jacksha roads. W-2 would reconnect to existing US-95 on the north end of the project near the grain elevators south of the South Fork Palouse River Bridge. Overpass structures would be constructed over Jacksha Road and Snow Road approximately three quarters of a mile west of the existing junction of US-95 and Snow Road.

W-3 would be approximately 7.8 miles long. It would begin just south of Thorncreek Road and would be aligned east of Broenneke Road and west of Jacksha Road. This alignment would reconnect to existing US-95 near the grain elevators south of the South Fork Palouse River Bridge. Overpass structures would be constructed over Jacksha Road, an unnamed private road and Snow Road.

W-4 would be approximately 7.5 miles long. It would begin at Thorncreek Road and would closely follow the existing US-95 alignment to approximately three quarters of a mile south of Zeitler Road. The alignment would then shift west of existing US-95. W-4 would reconnect to existing US-95 near the grain elevators south of the South Fork Palouse River Bridge. An overpass structure would be constructed over Snow Road.

Central Corridor

C-1 would be approximately 7.3 miles long. It would begin at Thorncreek Road and would closely follow the existing alignment with minor realignments to flatten the horizontal curves and vertical grades. C-1 would reconnect with existing US-95 near the grain elevators south of the South Fork Palouse River Bridge. No overpass structures would be constructed. C-1 would transition from a four-lane divided highway to a four-lane highway with center turn lane, curb, gutter and sidewalk at the south entrance to Clyde Road. Since this alignment primarily follows the existing US-95, no section of road would be turned over to the North Latah Highway District.

C-2 would be approximately 7.4 miles long. It would begin at Thorncreek Road and would closely follow the existing alignment to Zeitler Road. The alignment would then shift west of existing US-95 and continue north. C-2 would reconnect with existing US-95 near the grain elevators just south of the South Fork Palouse River Bridge. An overpass structure would be constructed over Snow Road.

C-3 would be approximately 6.8 miles long. It would begin at Thorncreek Road and would closely follow the existing alignment to approximately a quarter mile north of Eid Road. It would continue north running east of existing US-95. C-3 would reconnect with existing US-95 at Cameron Road to just south of the South Fork of the Palouse River. An overpass structure would be constructed at Zeitler Road.

Eastern Corridor

E-1 would be approximately 6.6 miles long. It would begin at Thorncreek Road and would closely follow existing US-95 to the top of Reisenauer Hill. From the top of Reisenauer Hill, it would run north to the power lines approximately one half mile from Cameron Road. E-1 would reconnect with existing US-95 near the grain elevators just south of the South Fork Palouse River Bridge. E-1 would be further west than E-2 and E-3. An overpass structure would be constructed at Eid Road.

E-2 would be approximately 6.7 miles long. It would begin at Thorncreek Road and closely follow existing US-95 to the top of Reisenauer Hill. From the top of Reisenauer Hill it would run north continuing to the power lines approximately one half mile from Cameron Road. E-2 would reconnect with existing US-95 near the grain elevators just south of the South Fork Palouse River Bridge. E-2 would be located approximately one half mile east of the E-1 Alternative, closer to Paradise Ridge. An overpass structure would be constructed at Eid Road.

E-3 would be approximately 6.6 miles long. It would closely follow existing US-95 to the top of Reisenauer Hill. From the top of Reisenauer Hill, it would run northwest to the power lines approximately one half mile from Cameron Road. E-3 would connect to existing US-95 just south of the South Fork Palouse River Bridge. E-3 would be located between the E-1 and E-2 Alternatives. An overpass structure would be constructed at Eid Road.

2.5.2 Screen Alternatives

The initial alternatives were evaluated and screened based on environmental and engineering factors. An alternative screening matrix was prepared that displayed the key benefits and environmental resources that could be affected in the project area as a result of the No Action and the 10 Action Alternatives. The criteria that were considered during the screening of the initial alternatives are listed below.

- Air Quality
- Archaeological Sites
- Design Standards
- Displacements
- Environmental Justice
- Hazardous Materials
- Noise
- Prime Farmland
- Right-of-Way Acres
- Socio-Economic
- Ungulates
- Water Quality
- Wetlands and Tributaries
- Estimated Construction Cost
- Historic Sites
- Plant Species and Communities of Concern
- Regulatory Floodways and Floodplains
- Safety
- State Sensitive Species
- Threatened and Endangered Species
- Visual Analysis
- Weather

As a result of the screening process, four alternatives were forwarded for detailed analysis in the DEIS; the No Action Alternative plus one alternative from the western, central and eastern corridors: W-4, C-3 and E-2. Maintaining a representative alternative from each corridor ensured the evaluation of a full range of reasonable alternatives. The remaining Action Alternatives were eliminated from further review. The results of the Level Two Screening were presented in a public meeting on January 18 and 19, 2006. The rationale for eliminating alternatives from further consideration or forwarding them for detailed analysis is summarized in Table 7. Level Two Screening Results. The details of the benefits and effects that were considered are described in the Screening of Alternatives Technical Report.

Table 7. Level Two Screening Results

Alternative	Screening Results	Summary of Rationale for Eliminating or Forwarding Alternatives
No Action	Forwarded for detailed analysis	Minimal environmental effect. Required to be evaluated in an EIS per NEPA regulations
W-1	Eliminated	Highest effects to floodplains and prime farmland of all alignment alternatives. Highest anticipated crash rate for the western corridor alternatives. Higher effects to ungulate habitat, cultural resources, a historic resource and rare plant communities than other alternatives in the western corridor. Other alternatives would have less environmental effects.
W-2	Eliminated	High effects to floodplains, visual resources and prime farmlands. Adverse effects to one historic resource. Other western corridor alternatives had less effect to historic/cultural resources.

Alternative	Screening Results	Summary of Rationale for Eliminating or Forwarding Alternatives
W-3	Eliminated	High effects to visual resources, prime farmlands, rare plant communities and floodplains. This alignment also crossed an area known to support ungulate populations.
W-4	Forwarded for detailed analysis	Least cultural resource (based on preliminary information), floodplain and visual quality effects compared to the other western corridor alternatives. No effects to ungulate habitat or rare plant communities.
C-1	Eliminated	High effects to historic resources Highest predicted number of crashes. High effects to cultural resources, residential displacement and wetlands.
C-2	Eliminated	High effects to cultural resources. High effects to floodplains, wetlands and visual resources.
C-3	Forwarded for detailed analysis	Least floodplain, visual and wetland effects in the central corridor. No effects to cultural resources.
E-1	Eliminated	Only alternative in the eastern corridor that affects a historic resource. High effects to wetlands and rare plant communities
E-2	Forwarded for detailed analysis	Less effect to wetlands and tributaries compared to other corridor alternatives. Avoided cultural resources. Greater safety benefit compared to alternatives in other corridors
E-3	Eliminated	Similar to E-2 but with slightly higher effects to wetlands. Affected two rare plant communities that E-2 avoided.

Comparison of Initial Alternatives

Western Corridor

The four western corridor alternatives have relatively similar effects. All of the alternatives would affect wetlands, floodplains, noise, prime farmlands, visual quality and cultural resources. The W-4 Alternative was forwarded for detailed analysis due to its low effects to floodplains, visual quality, ungulate habitat, rare plant communities and a lower crash rate. Based on preliminary information the W-4 Alternative was believed to have less effects to historic resources compared to the other western alternatives. During the more detailed analysis of W-4 it was determined to affect a historic farmstead; however, due to the other factors involved, W-4 would still have been forwarded. The W-1 and W-3 alternatives were eliminated from further consideration due to their higher effects to ungulate habitat, prime farmlands and two rare plant communities. In addition, W-1 had the highest crash rate in the western corridor, which does not meet the purpose and need to the same extent as the other alternatives.

Central Corridor

The three central corridor alternatives would all affect cultural resources, wetlands, floodplains, prime farmlands and displace businesses and residences. The C-1 Alternative was eliminated from further consideration because it had the highest crash rate of the three alternatives. It affected two historic resources and had the greatest number of displacements. In addition to these effects the C-1 Alternative also affected 2.9 more acres of wetland than the C-3 Alternative.

While the central corridor alternatives resulted in similar crash rates, C-2 was eliminated due to its higher impacts to wetlands, floodplains and visual effects. The C-3 Alternative was forwarded for detailed analysis because it had no adverse effects to historic resources and had the least wetland, cultural and visual effects compared to the other central corridor alternatives.

Eastern Corridor

The alternatives in the eastern corridor resulted in very similar effects. All of the alternatives in this corridor had effects to wetlands, displacements, noise, visual and prime farmlands. The E-1 Alternative was eliminated from further consideration because it affected one historic resource while the other two alternatives avoided historical resources. In addition, the E-1 Alternative had the highest effects to wetlands and visual quality in the corridor.

The E-2 Alternative was forwarded for further consideration because it had the least effect to wetlands, cultural resources and was the only alternative to not affect rare plant communities. The E-3 Alternative effects were very similar to the E-2 Alternative but E-3 resulted in three more residential displacements and twice as many business displacements than E-2. The E-3 Alternative affected two rare plant communities and resulted in slightly higher effects to prime farmlands compared to E-2. While the differences were small they were higher and more adverse. The E-2 Alternative was forwarded for detailed analysis because it had the least overall effects compared to the other alternatives in the eastern corridor. The Action Alternatives alignments that were forwarded are shown in Exhibit 12. Alternatives Forwarded for Detailed Analysis and detailed in Exhibits 13 to 18 Alignment Alternative Maps.

Exhibit 12. Alternatives Forwarded for Detailed Analysis

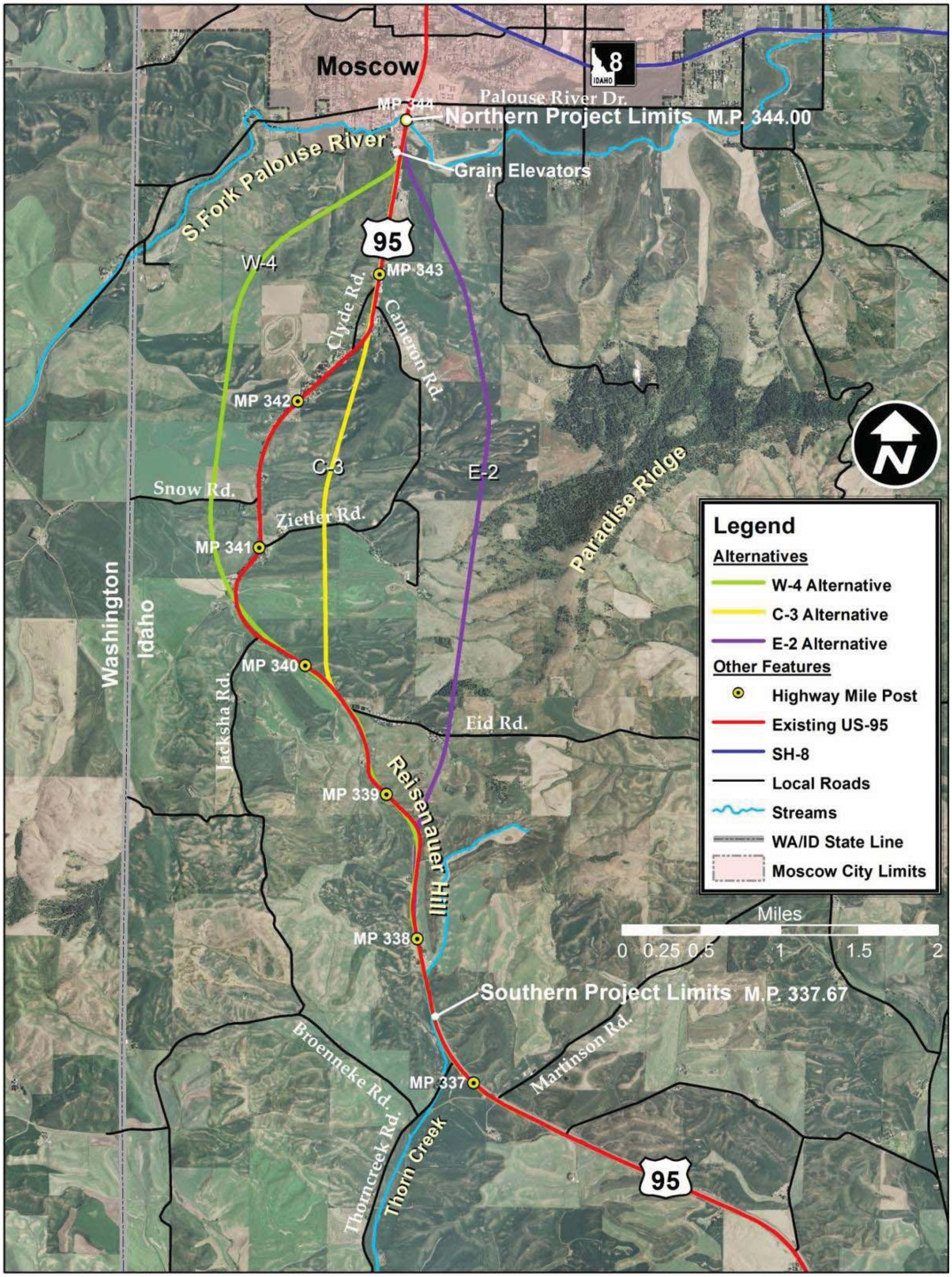


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Exhibit 13. Alignment Alternatives

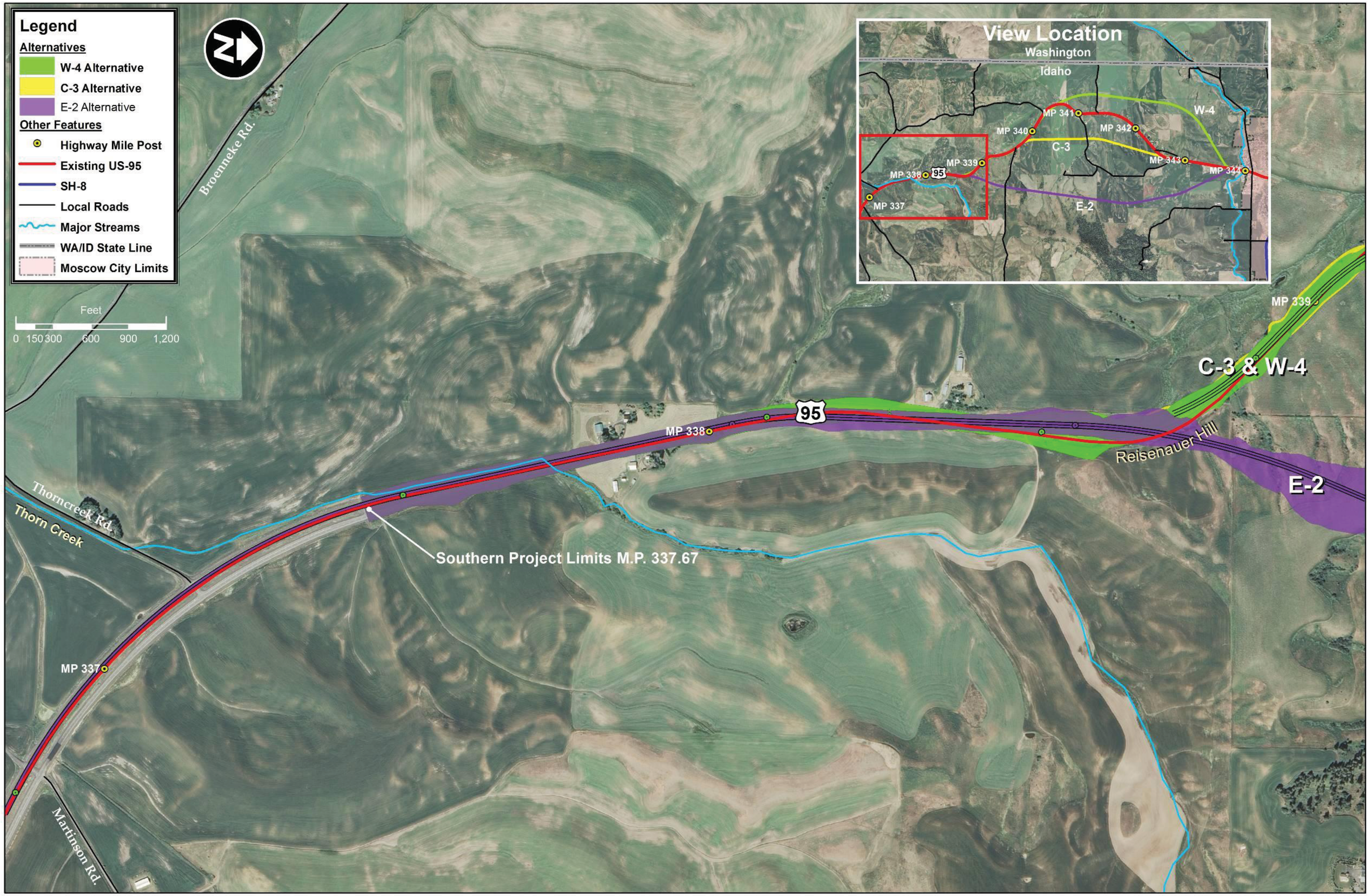

Exhibit 14. Alignment Alternatives

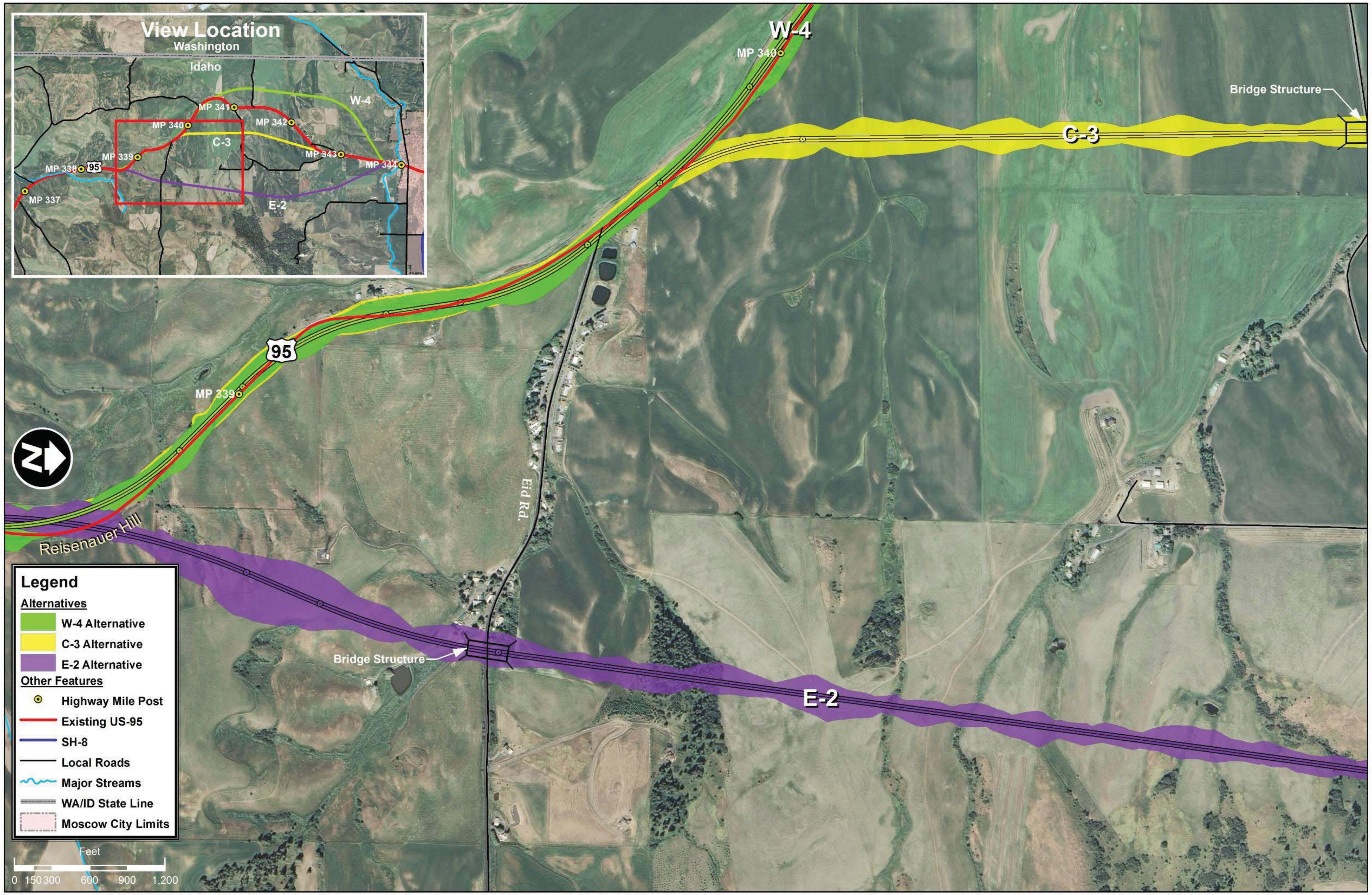

Exhibit 15. Alignment Alternatives

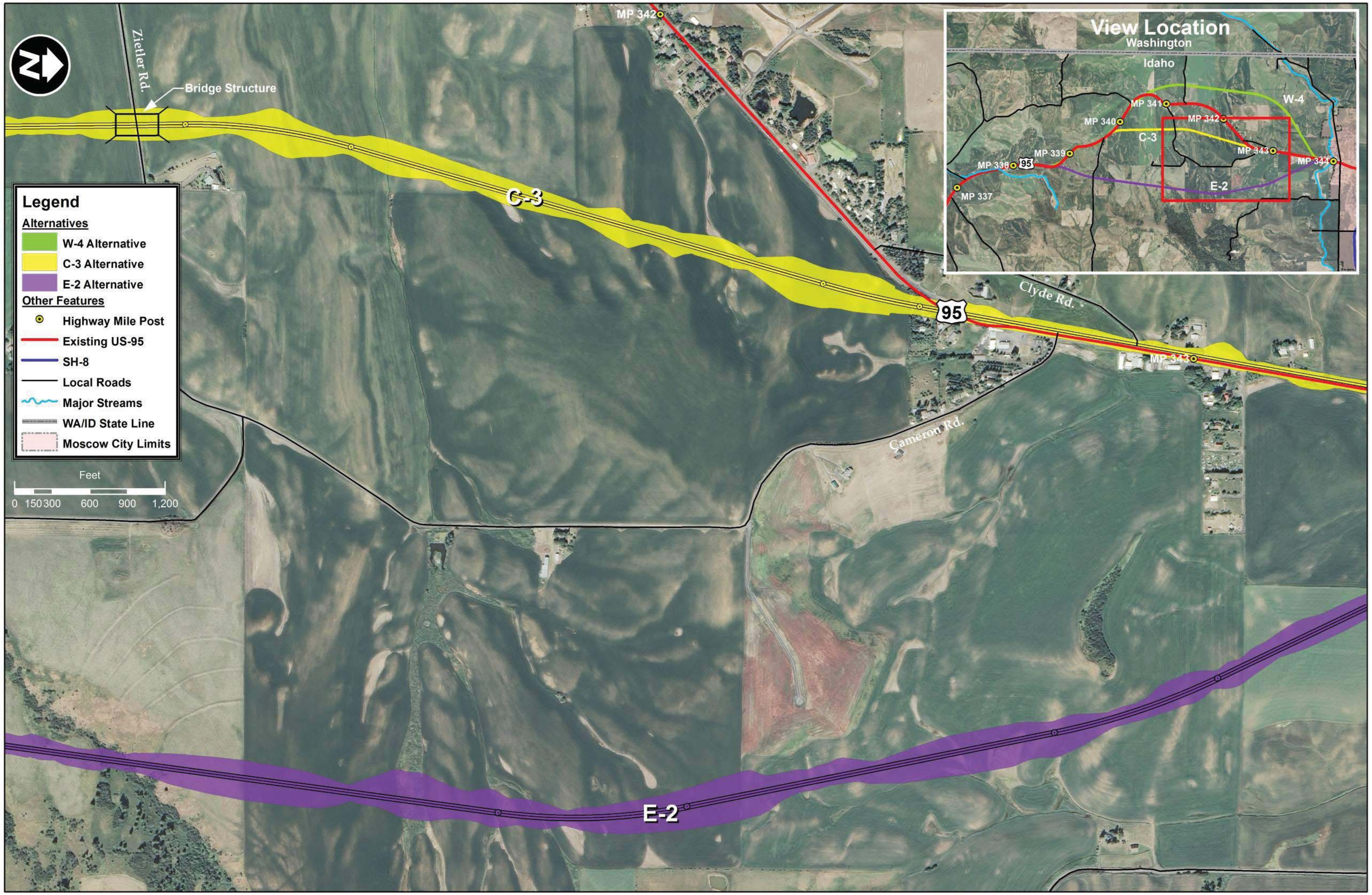

Exhibit 16. Alignment Alternatives

Exhibit 17. Alignment Alternatives

Exhibit 18. Alignment Alternatives

2.6 Comparison of Alternatives

Each of the four alternatives was analyzed for a full spectrum of environmental effects. The major differences between alternatives are described below and summarized in Table 8. Summary of Alternatives' Benefits and Effects. See the DEIS, Chapters 3, Affected Environment and Chapter 4, Environmental Consequences for details regarding specific resources and environmental effects by alternative. Additional detail may also be found in the resource technical reports.

Table 8. Summary of Alternatives' Benefits and Effects

Resources	Alternatives[6]			
	No Action	W-4	C-3	E-2
Predicted Crash Rate (crashes per year)	24.8	9.3	10.9	7.7
Access Points	66	36	47	22
Residential Displacements	0	3	7	5
Residences within 300 ft of centerline		9	12	9
Business Displacements	0	0	8	0
Businesses within 300 ft of centerline		7	10	5
New Right-of-Way (acres)	0	210	154	207
Prime Farmland (acres)	0	46.7	25.1	50.8
Cultural/Section 4(f) Resources	0	1 Adverse Effect/Use	0	0
Floodplains (acres)	0	3.6	1.8	0
Wetlands (acres)	0	5.45	0.99	3.61
Tributaries – Number of Crossings/Linear feet of affected tributary	0	9/5,517	5/7,808	5/2,592
Hazardous Material Sites	0	4	13(1 Potential Hazardous Material Cleanup)	4
Noise Effects	9	0	1 (this impacted receptor is displaced)	7 (5 impacted receptors are displaced)
Construction /Total Cost (mil $)	minimal	52/62	43/58	46/55

[6] The lengths of the W-4, C-3 and E-2 alternatives early in the screening process differ from the lengths analyzed in this DEIS due to a modification of the project limits following the level two screening. As a result the calculations presented during the screening process may differ from the calculations presented in this DEIS for the W-4, C-3 and E-2 alternatives.

After the Level Two Screening was completed, additional studies were completed and a more detailed level of analysis was used; therefore the project effects may differ slightly from those calculated during the initial screening of alternatives. However, the differences were not substantial and would not result in different screening results.

No Action

The No Action Alternative includes short-term minor restoration activities (safety and maintenance improvements, etc.) that maintain operation of the existing roadway. It would include projects such as turn lanes at public road approaches within the existing right-of-way. It would also include pavement overlays and seal coats to maintain the continuing operation of the existing roadway. The No Action Alternative would serve as a baseline and is required by FHWA NEPA regulations to be considered in the DEIS.

The No Action Alternative would not involve major construction or new right-of-way acquisition. It would continue to have stormwater and air quality effects, but would have the least overall environmental effect. However, the narrow roadway, roadway curvature and steep grades would still not meet AASHTO standards. With the projected increase in traffic volume the crash rate for the No Action Alternative is estimated to be 24.8 accidents per year by 2017. The No Action Alternative would have a LOS D by 2037 and would be substantially more congested than existing conditions. The No Action Alternative would have the worst safety and LOS compared to any of the alternatives and would not meet the project purpose and need.

W-4

W-4 would be aligned west of existing US-95. This alternative is 6.69 miles long transitioning to a four-lane with center turn lane, curb, gutter and sidewalk for the last 0.3 miles at the northern end of the project. W-4 would have the least effect to residences and similar effects as E-2 to hazardous materials. It would require the greatest amount of new right-of-way and would result in the greatest effects to floodplains, cultural/Section 4(f) resources, and the greatest number of tributary crossings. W-4 would not affect businesses or potential long-eared myotis, northern alligator lizard and pygmy nuthatch habitat associated with ponderosa pine stands near the base of Paradise Ridge.

C-3

The C-3 alignment would run closest to the current highway near the center of the corridor. This alternative is 5.94 miles long transitioning to a four-lane with center turn lane, curb, gutter and sidewalk for the last 1.42 miles at the northern end of the project. It would have the highest crash rate of the Action Alternatives. It would require the least amount of new right-of-way compared to W-4 and E-2 because it would utilize some of the existing roadway. C-3 would have the greatest adverse effect to residences, businesses, and would encroach on the greatest number of hazardous material sites. It would have the longest urban section that would operate at a LOS B. However, C-3 would have the least wetland and wildlife species effects. Similar to E-2, C-3 would have the fewest tributary crossings but would affect three times more linear feet of tributary channel compared to the E-2 Alternative. Also, similar to E-2, C-3 would avoid cultural/Section 4(f) resource effects.

E-2 (Preferred Alternative)

E-2 would be aligned east of existing US-95 near the base of Paradise Ridge. This alternative is 5.85 miles long transitioning to a four-lane with center turn lane, curb, gutter and sidewalk for the last 0.24 miles at the northern end of the project. The evaluation of effects during the screening process and the detailed analyses presented in this DEIS resulted in the lead agencies, FHWA and ITD, identifying the E-2 Alternative as the Preferred Alternative for the following reasons:

- It would have the greatest safety improvement
- It would have the fewest access points
- It would have the shortest length with the shortest travel time
- It would the least effect to streams
- It would have better weather conditions for driving than W-4.
- It would avoid effects to cultural/Section 4(f) resources, floodplains and business displacements
- It would best meet the project purpose and need

The primary disadvantages of E-2 compared to the other alternatives are that it would be located closer to the base of Paradise Ridge which provides moderate ungulate habitat and E-2 would also affect pine stands that are potential long-eared myotis, northern alligator lizard and pygmy nuthatch habitat.

The final selection of an alternative will not be made until the alternatives' effects and comments on the DEIS from the public hearing have been fully evaluated.

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3 AFFECTED ENVIRONMENT

This section describes the existing conditions of the natural and human environment in the study area that could be affected by any of the alternatives presented in the DEIS. Additional detail regarding the resources may be found in the respective technical reports. The data and level of detail are commensurate with the significance and degree of effects. The following environmental resources are evaluated in this chapter:

- Socio-economic and Environmental Justice
- Land Use and Recreation
- Farmland
- Cultural Resources
- Floodplains
- Wetlands and Tributaries
- Groundwater
- Vegetation, Fish and Wildlife
- Threatened and Endangered Species
- Transportation
- Visual Quality
- Noise
- Air Quality
- Hazardous Materials
- Energy

3.1 Socio-Economic Conditions and Environmental Justice

3.1.1 Regulatory Framework and Policies

Social and economic conditions and environmental justice are governed by the following:

- 23 CFR 771 FHWA Environmental Impact and Related Procedures
- 49 CFR 24; Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended
- Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- USDOT Order to Address Environmental Justice in Minority Populations and Low-Income Populations
- Title VI of the Civil Rights Act of 1964
- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

3.1.2 Methodology

Three detailed technical reports were prepared to evaluate socio-economic conditions and effects, highway-induced growth and effects to environmental justice (low-income and minority) populations.

The *Community Impact Assessment* (HDR 2006) evaluated the demographic characteristics of Latah County as a whole as well as the project corridor. Population, including age, race and Hispanic origin, employment, and income were analyzed. General population trends, land use, displacements, community cohesion, visual and noise effects were also evaluated. Community members, local officials, and other stakeholders were interviewed to collect information regarding community resources and potential effects.

The *Community Profile-Induced Development* report (HDR 2005a) evaluated existing socio-economic conditions, land use and development trends in the project area. A Delphi process which utilized a panel of local experts was used to predict highway-related growth. The Delphi process relies on the opinions of a panel of experts to provide their assessment of likely future outcomes by responding to several rounds of questions anonymously. The process is done iteratively with controlled feedback. Anonymity allows participants to focus on the issues, not the personalities of the participants. The repeated rounds with feedback from the moderators allow participants to reconsider their responses in light of new information but prevent lobbying for any point of view. The statistical group response gives the range of opinion as well as the most common response. The local panelists in the Delphi process for this project included:

- Michelle Fuson, Latah County Planning Director
- Gundars Rudzitis, University of Idaho Professor
- Shelley Bennet, Realtor
- Walter Steed, City of Moscow Transportation Commission
- Tom LaPointe, Moscow Valley Transit Executive Director
- Travis Wambeke, Local Engineering Consultant
- Orland Arneberg, North Latah Highway District
- Jack Nelson, County Commissioner
- Andrew Ackermann, City of Moscow Assistant Community Development Director
- BJ Swanson, American West Bank
- Cinthya Barnhart, Latah Economic Development Council Executive Director
- Jeff Martin, CEO Gritman Medical Center

The *Environmental Justice Report* (HDR 2005b) identified minority and low-income populations in the project area and evaluated the effects of each alternative on Environmental Justice populations.

Updated information for each of the reports was prepared in 2011. The findings of the reports and updates are summarized in this section. See the Community Impact Technical Reports.

EO 12898 directs federal agencies to identify and prevent disproportionately high and adverse human health or environmental effects to minority and low income populations, as a result of federal activities, regardless of population size.

According to USDOT, minority and low-income populations are any identifiable group of minority or low-income persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons who will be similarly affected (FHWA 2009). Effects are determined to be disproportionately high if the adverse effect is predominantly borne by a minority and/or low-income population and is appreciably more severe than the adverse effect that will be suffered by the remainder of the community.

Minority populations are groups that are Black, Hispanic, Asian American, American Indian and Alaskan Native, Native Hawaiian or other Pacific Islander (FHWA 2009).

Low-income populations are a group of persons whose household income is at or below the Department of Health and Human Services (HHS) poverty guidelines (FHWA 2009). The HHS poverty guidelines were $22,050 for a family of four in both 2009 and 2010 (HHS 2010).

Adverse effects are the combination of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: injury or death, displacement, air quality, noise impacts, water pollution, soil contamination; diminution of aesthetic values; or disruption of community cohesion. It also includes the denial of, reduction in, or significant delay in the receipt of benefits of programs, policies, or activities (FHWA 1998).

The determination of whether there would be a disproportionately high and adverse human health or environmental effects as a result of the alternatives was based on evaluating two factors:

- The presence of minority or low-income populations that could be affected by the alternatives.

- If low income or minority populations are present, are the effects to those populations disproportionately high or adverse.

3.1.3 Existing Conditions

This section discusses the demographic characteristics of Latah County and the Thorncreek to Moscow corridor. Characteristics of the population including age, race, Hispanic origin, employment, and income are presented in this section. See the Community Profile - Induced Development Technical Report and update for details.

The corridor consists of two areas called census block groups: census tract 54, block group 2[7], and census tract 57, block group 3. Those block groups were larger than the actual corridor boundaries, so the data presented in the profile is more inclusive than the actual demographics found in the corridor. The City of Genesee population is excluded from the data for the corridor because the city is classified by the Census as its own unit of geography. By excluding this population center, the analysis area is more representative of the corridor study area as a whole.

Population

The Thorncreek Road to Moscow project consists of primarily undeveloped land dominated by dryland farming. Public land borders a portion of the eastern edge of the project area. The main population center associated with the project area is the City of Moscow with a population of approximately 24,338. The population of the project corridor has experienced a six percent decrease in population between 2000 and 2010 whereas Latah County experienced an increase of nine percent. See Table 9. Population.

Table 9. Population

Year	Latah County	Corridor
2000	34,935	1,307
2004	35,619	1,217
2010	37,244	1,231
Percent Change	+9%	-6%

Population and household forecasts to 2021 for Latah County were available from the Idaho Department of Labor. Latah County's population is forecast to continue increasing

[7] Census Tract 54, Block Group 2 was listed as Census Tract 54, Block Group 6 in the original Community Profile report. The Block Group boundary did not change.

moderately reaching 38,797 by 2021. This is an approximately four percent increase. See Table 10. Latah County Population Forecast.

Table 10. Latah County Population Forecast

Year	Population	Estimated Households[8]
2010	37,244	14,708
2016	38,162	15,025
2021	38,797	15,349

Source: Idaho Department of Labor

Population and household forecasts were not available at the corridor level. Yet, based on historic trends, low to moderate increases can be anticipated.

Age

In 2010, the largest concentration of Latah County's population was in the 15 to 24 and 25 to 44 year old age groups. These two age groups totaled more than one-half of the county's entire population. The 45 to 59 year old age group was the next largest. The median age for Latah County was 28 years old. The population distribution, especially with a concentration of persons in the 15 to 24 year old age bracket, is consistent with that of a university town population.

In the project corridor, the 25 to 44 year old and 45 to 59 year old age groups comprised approximately 49 percent of the population. The next largest age group was the under 15 age group. In 2010 the median age in the corridor study area was 40 years old. The study area's population is more similar to an area with families and children.

Race and Hispanic Origin

In 2010 approximately 92.8 percent of Latah County's total population was white. Hispanic origin and other races each comprised 3.7 percent of the populations. The racial minority and Hispanic origin of Latah County in 2010 was nearly 11 percent of the county's total population. See Table 11. Race and Hispanic Origin and Table 12. Percentage Race and Hispanic Origin.

[8] A household includes all the people who occupy a housing unit as their usual place of residence.

Table 11. Race and Hispanic Origin

Race or Origin	Latah County 2010	Corridor 2010
White	34,557	1,188
Black	293	5
American Indian	237	16
Asian	781	14
Other Races	1,376	8
Total Populations	37,244	1,231
Hispanic	824	20

Table 12. Percentage Race and Hispanic Origin

Race or Origin	Latah County 2010 (percent)	Corridor 2010 (percent)
White	92.8	96.5
Black	0.8	0.4
American Indian	0.6	1.3
Asian	2.1	1.1
Other Races	3.7	0.6
Hispanic origin[9]	3.7	1.6

In the project corridor, 96.5 percent of the total population was white. The racial minority and Hispanic origin population was five percent.

Housing Units

Housing units refer to the structures in which people live, while households refer to the people living in them. In 2010, Latah County had 15,988 housing units. See Table 13. Housing Characteristics. This is a 15 percent increase in housing since 2000.

In the project corridor, there was no change in the numbers of housing units between 2000 and 2010. The project corridor has approximately 20 percent more owner occupied homes than Latah County, and has three percent more vacant units compared to the county. See the Community Profile - Induced Development Technical Report and update for more detail.

[9] Hispanic origin is not considered a race and is therefore not included in the totals for race.

Table 13. Housing Characteristics

Housing Variable	Latah County 2010	Corridor 2010
Total Housing Units	15,988	604
Occupied Units	14,708	538
Owner-Occupied	*8,265*	*407*
Renter Occupied	*6,443*	*131*
Vacant Units	1,280	66

Source: U.S. Census Bureau, 2010

Community Resources

Exhibit 19. Points of Interest displays the locations of local businesses, landmarks, community resources, environmentally important locations and recreation sites.

Employment

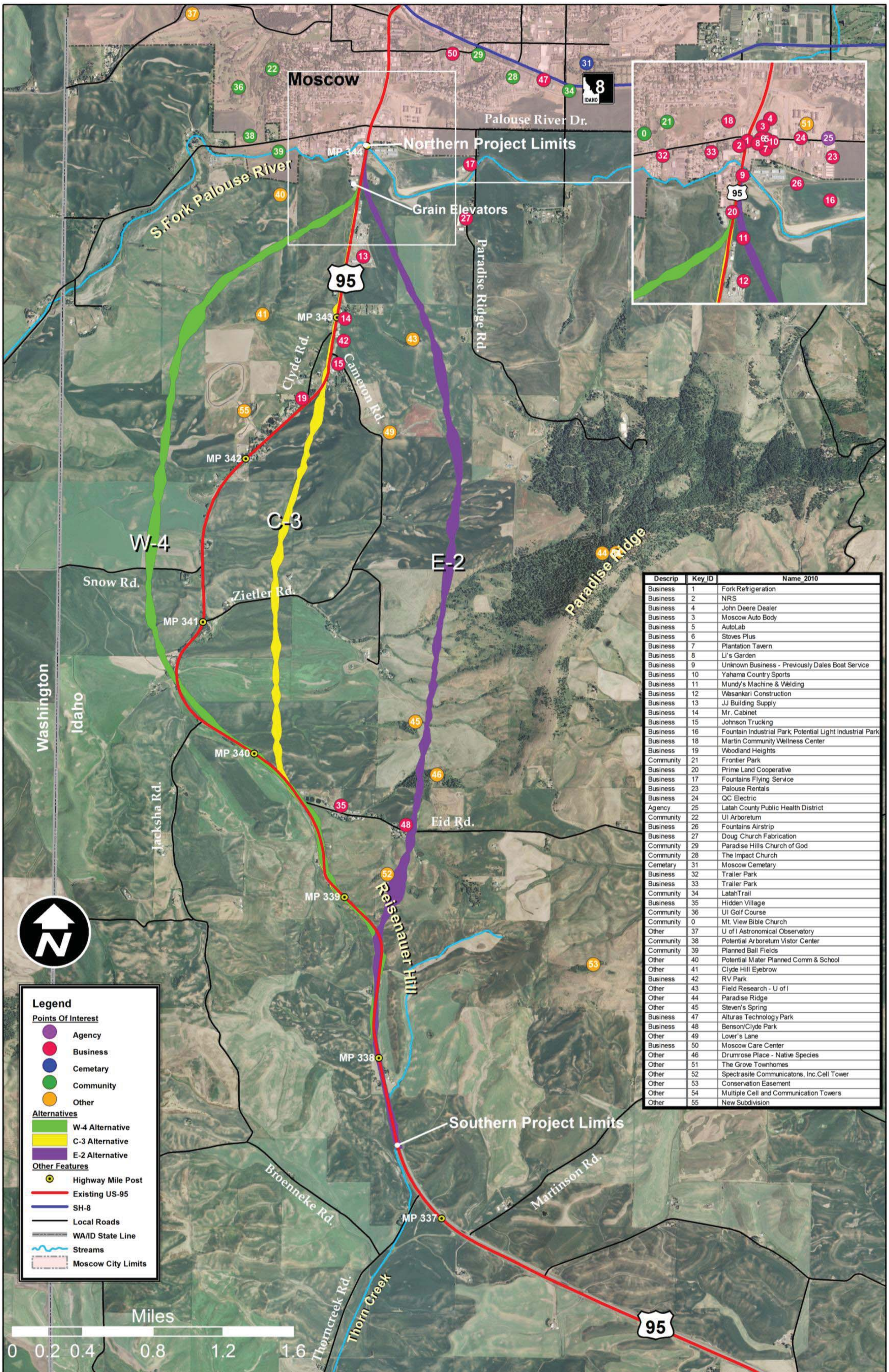
Table 14. 2009 Latah County Employment presents the numbers and percentages of the major employment sectors in Latah County. Latah County's unemployment rate was six percent in 2009, compared to eight percent for the State of Idaho.

Table 14. 2009 Latah County Employment

Employment Sector	Employees	Percentage
Farming	1,077	5.
Forestry, Fishing	C	-
Mining	C	-
Utilities	20	0.1
Construction	845	4
Manufacturing	437	2
Wholesale Trade	245	1
Retail Trade	2,457	11
Transportation	184	0.01
Information	350	2
Finance and Insurance	460	2
Real Estate	649	3
Services	7,074	33
Government	7,090	33
Other		3.89
Total	21,431	100

Source: (U.S. Bureau of Economic Analysis 2009)
C=Confidential information; - No data available

Exhibit 19. Points of Interest



Descrip	Key_ID	Name_2010
Business	1	Fork Refrigeration
Business	2	NRS
Business	4	John Deere Dealer
Business	3	Moscow Auto Body
Business	5	AutoLab
Business	6	Stoves Plus
Business	7	Plantation Tavern
Business	8	Li's Garden
Business	9	Unknown Business - Previously Dales Boat Service
Business	10	Yahama Country Sports
Business	11	Mundy's Machine & Welding
Business	12	Wasankari Construction
Business	13	JJ Building Supply
Business	14	Mr. Cabinet
Business	15	Johnson Trucking
Business	16	Fountain Industrial Park; Potential Light Industrial Park
Business	18	Martin Community Wellness Center
Business	19	Woodland Heights
Community	21	Frontier Park
Business	20	Prime Land Cooperative
Business	17	Fountains Flying Service
Business	23	Palouse Rentals
Business	24	QC Electric
Agency	25	Latah County Public Health District
Community	22	UI Arboretum
Business	26	Fountains Airstrip
Business	27	Doug Church Fabrication
Community	29	Paradise Hills Church of God
Community	28	The Impact Church
Cemetary	31	Moscow Cemetary
Business	32	Trailer Park
Business	33	Trailer Park
Community	34	LatahTrail
Business	35	Hidden Village
Community	36	UI Golf Course
Community	0	Mt. View Bible Church
Other	37	U of I Astronomical Observatory
Community	38	Potential Arboretum Vistor Center
Community	39	Planned Ball Fields
Other	40	Potential Mater Planned Comm & School
Other	41	Clyde Hill Eyebrow
Business	42	RV Park
Other	43	Field Research - U of I
Other	44	Paradise Ridge
Other	45	Steven's Spring
Business	47	Alturas Technology Park
Business	48	Benson/Clyde Park
Other	49	Lover's Lane
Business	50	Moscow Care Center
Other	46	Drumrose Place - Native Species
Other	51	The Grove Townhomes
Other	52	Spectrasite Communicatons, Inc.Cell Tower
Other	53	Conservation Easement
Other	54	Multiple Cell and Communication Towers
Other	55	New Subdivision

Latah County's full and part-time employment was 21,431 in 2009. The services and government sectors contained the largest number of employees each accounting for about one-third of the county's total employment. Retail trade employment was the third largest employment sector in the county.

The largest employers in Latah County are the University of Idaho and Gritman Medical. Combined, they employ more than 40 percent of the workers in the county (Tacke pers. comm. 2011). Other major government employers include Latah County, the City of Moscow, and School District # 281. The major employers in the service sector are Gritman Medical Center and the Good Samaritan Nursing Home. The primary employers in retail trade are Wal-Mart, Winco, and Rosauers Super Markets. Employment data was not available for the forestry, fishing and mining employment sectors. See Table 15. Major Employers in Latah County.

Table 15. Major Employers in Latah County

Employer	Average Number of Employees
University of Idaho	4,000-5,000
Gritman Medical	4,000-5,000
Moscow School District	400-500
City Moscow	200-300
University Inn	100-200
Latah County	100-200
Bennett Lumber Products	100-200
Good Samaritan Nursing Home	100-200
Disability Action Center NW	100-200

Source: pers. Comm. Tacke, 2011

Detailed employment data or forecasts were not readily available for the project corridor. However, based on an inventory of the land use, farming, agricultural related services, and general service providers appear to be the primary sources of employment in the corridor.

Latah County's employment projections are based on forecasts prepared for each sector of the county's economy. Latah County's full and part-time employment is forecast to increase by approximately ten percent by 2021. See Table 16. Latah County Employment Forecast. Detailed predictions showed the strongest employment gains are expected in the retail trade, government, and health care trade sectors.

Table 16. Latah County Employment Forecast

Year	Employed Persons
2010	21,012
2016	22,582
2021	23,215

Source: Idaho Department of Labor, 2010

Income

The largest concentration of households in Latah County had incomes below $15,000 in 2009. That income distribution is consistent with an area with a large concentration of university students. The next largest concentration of households in Latah County was in the $50,000 to $75,000 income range. See Table 17. Latah County Households by Income Range.

Table 17. Latah County Households by Income Range

Income Range	Latah County (# of Households)	Corridor (# of Households)
Under $15,000	2,874	147
$15,000 to $25,000	2,405	137
$25,000 to $35,000	1,638	57
$35,000 to $50,000	1,889	118
$50,000 to $75,000	2,705	186
$75,000 to $100,000	1,245	132
$100,000 to $150,00	998	63
$150,000 and More	446	35
Total	14,200	875

The per capita income in the corridor remained higher ($24,370) than for Latah County ($19,921) in 2010 (HDR 2011). The higher per capita income in the corridor area compared to the county, generally indicates that the area does not have a higher than average percentage of low-income residents.

3.1.4 Environmental Justice Populations

An Environmental Justice population may include low-income or minority populations. This section provides information regarding the presence of these populations within the study area.

Minority Populations

While minorities are present in the study area, there do not appear to be distinguishable minority populations. Based on the block level analysis, the largest percentage of minorities, 10.6 percent, occurs near the Hidden Village and Benson Mobile Home parks. 6.6 percent of the population residing near the Woodland Heights Mobile Home Court are minorities (HDR 2011).

Low-income Populations

A low-income population for the purpose of environmental justice is based on poverty levels established by Human and Health Services. The poverty level standard in 2009 and 2010 was $22,050 for a family of four (HHS, 2010). See Table 17. Latah County Households by Income Range and Table 18. Families Living Below Poverty Level. Rental housing can also be used as an indicator of income. Currently, there are no recipients of rental assistance within the corridor (IDHF 2011).

Table 18. Families Living Below Poverty Level

Location	Families (2010)	Families Below Poverty Level (2009)
Latah County	8,268	871 (9.4%)
Census Tract 54, Block Group 2 (previously Block Group 6)	179	5 (3%)
Census Tract 57, Block Group 3	389	6 (2%)

Source: IDHF 2011

Subpopulations of Concern

A windshield survey of the project corridor identified subpopulations that could have low income populations and a potential source of low-cost housing. These were located at the Woodland Heights Mobile Home Court (previously Valhalla Mobile Home Park), Hidden Village Mobile Home Park and Benson Mobile Home Park. Income data was not available for the residents and the mobile home park. However, records of need based rental assistance showed that there were no residents in the project area that obtained assistance. Many of the rentals in the corridor study area are located in the general vicinity of mobile home parks.

The Woodland Heights Mobile Home Court is located in the northern portion of the study area on the west side of US-95 approximately two miles south of Moscow (MP 342.5). The park contains 27 spaces for housing units plus two spaces for recreational vehicles (RVs). 24

of the units are rentals. The homes were built between 1959 and 1987. Persons living in the park include elderly, singles, singles with children, and families.

The Hidden Village Mobile Home Park is located on Eid Road on the east side of US-95 approximately five miles south of Moscow (MP 339.6). The park contains 32 housing units, only one of which is a rental. The manufactured homes were built in 1989 or 1990. The trailers at the park appear to be constructed in the 1950's to 1970's. Park residents include retirees, graduate students, empty nesters and families. The majority of the residents commute to work in the Moscow and Pullman areas. There is little tenancy turnover at the park, with the majority of the residents having stayed at the park for over 10 years.

The Benson Mobile Home Park is located on Eid Road just east of the Hidden Village Mobile Home Park. It contains ten rental units; seven mobile home spaces, one stick-built home, and two RV spaces. The stick-built home was built in 1910 and the mobile homes were constructed before 1973. Park residents include elderly, students, a hospital worker, an auto body repairman, and a scientist. The majority of the residents commute to Moscow and Pullman areas to work or travel frequently around the country. There is little tenancy turnover at the park, except for the students.

3.2 Land Use and Recreation

3.2.1 Regulatory and Policy Framework

Land use and recreation are governed by the following:

- 23 CFR 774-Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f))
- 1975 Land Use Planning Act of the State of Idaho, Title 67, Chapter 65
- Moscow Comprehensive Plan (City of Moscow 2009)
- Moscow Zoning Ordinance
- Latah County Comprehensive Plan (Latah County 2010)
- Latah County Zoning Map
- Latah County Land Use Ordinance (Latah County 2006)
- Section 6(f) of the Land and Water Conservation Fund (LWCFA)
- 23 USC 138: Preservation of Parklands

NEPA requires that the project action be assessed to determine if it is compatible with existing land use plans. The land use in the project area is regulated through city impact agreements, zoning ordinances and zoning classifications with incorporated areas falling within municipal jurisdiction and un-incorporated areas falling under county jurisdiction.

3.2.2 Methodology

A technical report titled *Community Profile - Induced Development* (HDR 2005a) was prepared and is summarized in this section. The report evaluated existing socio-economic conditions, land use planning documents and development data in the project area. A Delphi process, involving interviews with a panel of local experts, was used to predict development trends and highway-related growth. It was also used in the evaluation of the alternatives' consistency with land use plans. Reports were prepared in 2011 to provide updated information. See the Community Impact Technical Reports.

Planning documents that govern the land uses in the project area were evaluated to determine if the alternatives would be consistent with city, county and regional land use policies. Existing land uses were verified by comparing geographic information system (GIS) data with the results of field visits in the study area. City and county staff were interviewed and completed questionnaires regarding existing conditions and planned development in 2004 and 2011. A regional analysis and local trends analysis were performed to describe effects related to projected growth within the study area.

3.2.3 Existing Conditions

Land Use

The majority of the corridor is surrounded by agricultural land with associated farmhouses and agricultural buildings. There are clusters of residential development along certain portions of the corridor (Zeitler Road, Cameron Road, and Clyde Road) and two areas (Woodland Heights Mobile Home Court and Hidden Village /Benson Park) that have a concentration of mobile homes. The northern portion of the corridor is more highly developed with a mix of uses and an emphasis on auto-oriented businesses such as RV parts and service, automotive repair facilities, and trucking services.

Approximately 58 percent of all property in Latah County is privately owned. Nearly 16 percent of the county's land is owned by the federal government, with most of that land in the Nez Perce National Forest. State held land accounts for five percent of the county and includes the US-95 right-of-way. Most of the state property is endowment land for education. See Table 19. Latah County General Land Ownership.

Table 19. Latah County General Land Ownership

Land Ownership	Acreage	Percentage
Private	404,682	58.7
Forest Industry	126,701	18.4
US Government	108,285	15.7
State	35,577	5.2
University	9,856	1.4
Highway	2,100	0.3
City Owned	1,990	0.3
Railroad	665	0.1
Latah County	493	0.1
School District	296	Less than 0.1

Nearly 96 percent of Latah County is in low intensity land use such as forest land and agriculture. The county contains 3,400 acres of land designated as urban which accounts for about a half percent of the county's total land. See Community Impact Technical Reports; Community Profile and Induced Development (HDR 2005a)

Low-density residential development is the only type of residential development allowed in unincorporated Latah County. Commercial developments are expected along US-95 at the southern edge of the city limits.

City of Moscow Comprehensive Plan

The City of Moscow adopted a new Comprehensive Plan in 2009. While most of the project area is located outside the City limits, Latah County has adopted the City of Moscow's zoning ordinance and zoning classifications for the area of impact located in the northern end of the project. The land outside the city limits is zoned by Latah County as suburban residential.

The City of Moscow Comprehensive Plan promotes a system of transportation and circulation within and around the city that will make it possible for all people utilizing various modes of transportation to reach their destination as safely and as easily as possible, with the least disturbance possible occurring upon adjacent uses. The plan also states that roads and intersections are to be designed to restrict and control vehicular access along state and federal highways in the Area of City Impact. The area east of US-95 at the southern edge of the city is designated as light industrial use.

The City of Moscow Comprehensive Plan update did not address any of the proposed US-95 alignments but does consider the following potential developments (City of Moscow 2009):

- The City of Moscow plans to develop the Ring Road concept which is a long range, unfunded improvement. The project is a planned loop around the City of Moscow that would permit through traffic on both US-95 and SH-8 to travel around the perimeter of the City. It has no definitive alignment although it was proposed generally west of existing US-95. The alternative to a western route would be an eastern route; however, several factors make the western route a more logical choice. These reasons include the deterrents to city growth to the west, proximity to the university, the central business district and shopping areas, proximity of Pullman, and the potential for city growth.
- A proposed ball park (parks and open space) was rezoned and annexed into the City. Build out of the park isn't anticipated for several years.
- Future auto-urban commercial land uses are planned along the US-95 corridor entering Moscow.
- Auto-urban residential growth areas have been extended further south of the City.
- The City of Moscow recently worked on a new Master Plan for an Industrial Park that is located north of the South Fork of the Palouse River.

Latah County Comprehensive Plan

Latah County adopted a new Comprehensive Plan and Land Use Zoning (Resolution 2010-32) in December, 2010. However, the plan remains relatively unchanged from the previous plan with the same goals to maintain the largely rural nature of the county. The comprehensive plan goals are stated below:

- Preservation of the rural character of Latah County to ensure the protection of the cultural, scenic and natural amenities presently found in the county.
- Preservation of agricultural and forest land uses to ensure the continued viability of an agricultural and forest based economy in rural Latah County.
- Fostering of other land uses which will help achieve a solid broad based and sustainable economic foundation.

- Clustering of commercial and higher density residential uses in and around areas with adequate public services.
- Ensure that land use policies do not unconstitutionally violate private property rights.

The key policies related to transportation and the project in the new Comprehensive Plan include:

- Limit the number of access points to state and federal highways.
- Ensure that buildings are set back a safe distance from public roads (Latah County 2010).

The plans reflect the goals of protecting productive agricultural and forested areas and to identify suitable areas for future residential, commercial, or industrial development.

North Latah County Highway District Transportation Plan

The North Latah County Highway District (NLCHD) Transportation Plan was completed in November 2006. This was an update to a previous transportation plan. The plan discusses the potential re-alignment of US-95. It verifies that three alignments are being considered and that once a final alignment is selected, approved, and constructed, the current US-95 roadway will be placed under the jurisdiction of the NLCHD (Carscallen pers. comm. 2011).

Other Plans

The City of Moscow is planning to prepare a Moscow School District Long-Range Facilities Plan. The City of Moscow will also be conducting a transportation plan that is anticipated to begin in 2012 with possible completion in 2014.

Recreation

Primary recreational facilities in the project area are shown in Exhibit 19. Points of Interest and include the following:

- Frontier Park
- Paradise Ridge Road (bicycling and hiking)
- University of Idaho Golf Course
- University of Idaho Arboretum
- Planned recreational areas including multi-use ball fields, Latah Trail and an arboretum.

The Latah County Comprehensive Plan goals for recreation are to encourage a variety of recreational opportunities in Latah County by implementing policies that:

- Encourage the development of suitable land for recreational uses.
- Ensure the compatibility of recreational areas with adjoining land uses.
- Encourage the dedication of land within new developments for recreational use.

3.3 Farmland

3.3.1 Regulatory Framework and Policies

Farmland is governed by the following:

- The Farmland Protection Policy Act (FPPA) of 1981
- Guidelines for Implementing the Final Rule of the Farmland Protection Policy Act for Highway Projects
- State of Idaho Local Land Use Planning Act

The FPPA of 1981 requires that federal projects minimize the conversion of farmland to nonagricultural uses, and that projects consider state and local farmland protection policies to the extent that is practical. Farmland subject to FPPA includes prime and unique farmland and farmland of statewide importance. Farmland considered under FPPA does not have to be currently used for agriculture but cannot be water, urban or developed land (FHWA 1989).

3.3.2 Methodology

A technical report titled *Farmland Protection Policy Act* (Haagan 2006) was prepared to assess the farmlands in the project area and to determine the relative effects of the alternatives to farmland. The study area was evaluated for prime, unique, and farmland of statewide importance by reviewing farmland soil lists, U.S. Department of Agriculture (USDA) maps and through consultation with Natural Resource Conservation Service (NRCS). A Land Evaluation and Site Assessment was completed in order to rate and rank sites for agricultural importance (Haagen 2006). The information for each alternative was recorded by NRCS staff in the NRCS Form NRCS-CPA-106 in December 3, 2006. See Appendix 1, Key Agency Correspondence and Forms; Farmland Conversion Impact Rating for Corridor Type Projects. The 2006 report was reviewed by the author, Ed Haagen in 2011 and he determined that the crop rotations, farming operations, and leasing arrangements had changed slightly since the original analysis and will continue to change. However, the existing conditions in 2011 do not differ substantially from those in 2006. Site assessment criteria that were considered in the farmland conversion impact rating score for each alternative included:

- Area in non urban use
- Perimeter in non urban use
- Percent of corridor being farmed
- Protection provided by state or local government
- Size of farm unit compared to average
- Creation of non farmable units
- Availability of farm support
- On-farm investments
- Effects of conversion on farm support services
- Compatibility with existing agricultural use

The USDA recommends that alternatives with farmland impact rating scores totaling 160 points or greater be given increasingly high levels of consideration for protection from conversion. See the Farmland Technical Report for more information.

Agricultural lands not considered prime farmlands or prime farmland soils under the USDA definition are also considered under NEPA. The farmland classification system identifies map units as prime farmland, unique farmland, farmland of statewide importance, and farmland of local importance. Further clarification of farmland classifications may be found in the National Soils Survey Handbook (USDA 2007).

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Examples of these crops include grain, forage, fiber, oilseed, sugar beets, sugarcane, vegetables, tobacco, orchard, vineyard, and bush fruit crops. The land must have the soil quality, growing season and moisture supply needed to economically produce sustained high yields of crops when treated and managed according to acceptable farming methods (USDA 1991). Prime farmland soils currently located in or committed to urban development are not subject to the FPPA.

Unique farmland is land other than prime farmland used for the production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops include citrus, tree nuts, olives and cranberries.

Farmland of statewide importance is classified by the NRCS as farmland of lesser quality than prime farmland by having the soil, water supply and other characteristics that, with good management, yield productive crops.

Farmland of local importance. In some local areas, there is concern for certain additional farmlands for the production of food, feed, fiber, forage, and oilseed crops even though these lands are not identified as having national or statewide importance.

3.3.3 Existing Conditions

This section discusses general farmland trends, crops and farmland within the study area classified as prime, unique and farmland of statewide importance (Environmental Analysis Bureau 1997).

There are approximately 265,000 acres of cropland in Latah County. Farming operations are generally privately owned family farms but in many cases include leased land. The average farm size in Latah County is 494 acres; however, considering rental property, many producers are farming more than 1,000 acres. The principal crop is winter wheat with an average yield of about 80 bushels per acre. Other primary crops grown in the area include barley, field peas, garbanzo beans and lentils. See Table 20. Latah County Crop Production.

These crops are usually grown in a rotation with winter wheat to prevent disease and control erosion. Spring barley or lentils followed by two or three years of winter wheat would be a normal rotation for the area. Rotations vary depending on the producer's farming operation and the conservation programs in which the farm is enrolled. Table 20. Latah County Crop Production shows the acreages and percentages of crops in Latah County.

Table 20. Latah County Crop Production

Crop	Estimated Acres of Production (2005)	Estimated Percent of Total Production
Wheat	97,068	43
Barley	10,550	5
Peas	21,011	9
Lentils	31,976	14
Garbanzo	10,406	5
Canola	228	Less than 1
Rapeseed	452	Less than 1
Conservation Reserve Program (CRP)	46,410	21
Hay	5,027	2
Pasture	131	Less than 1
Total	223,259	100

There are an estimated 11,000 acres of land designated as crop fields in the project area of which approximately 98 percent is privately owned. Table 21. Farmland Classifications in Project Corridor shows the farmland types within the project corridor. Farmland classified as Prime and Farmland of Statewide Importance are present in the study area. No farmland classified as Unique occurs in the project area or in Latah County.

Table 21. Farmland Classifications in Project Corridor

Farmland Type	Estimated Land Currently in Production (acres)
Cultivated Crops	9,000
Hay or Pasture	500
Shrub Vegetation	550
Farms, rural residences, commercial areas, forest land, highway right of way and water	400
Conservation Reserve Program	1,500

3.4 Cultural Resources

3.4.1 Regulatory Framework and Policies

Cultural resources are governed by the following:

- 16 USC 470-National Historic Preservation Act (NHPA), Section 106 and Implementing Regulations

- 36 CFR 800-Protection of Historic Properties
- 23 CFR 774-Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f))
- 49 USC 303-Policy on Lands, Wildlife and waterfowl refuges, and historic sites
- 42 USC 1996 and 1996a-American Indian Religious Freedom Act (AIRFA)
- 16 USC 431-433-Antiquities Act
- 25 USC 3001-Native American Graves Protection and Repatriation Act (NAGPRA)
- Idaho Graves Protection Act: Title 27, Idaho Statutes, Cemeteries, and Crematoriums

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in 36 CFR Part 800.

The NHPA defines the National Register of Historic Places (NRHP) criteria for eligibility (A through D), explains the need for properties to retain enough elements of integrity (location, design, setting, workmanship, materials, feeling and association) to be eligible for the NRHP, and defines the meaning of the different effect determinations.

3.4.2 Methodology

The area of potential effect (APE) established for the project was initially based on approximately 250 feet from the centerlines of the alignments and areas immediately adjacent to this area for each of the Action Alternatives. In 2011, the cultural resource survey technical report was updated and the evaluation area was expanded to approximately 500 feet from the centerlines of the alternatives. The Idaho State Historic Preservation Officer (SHPO) and the Nez Perce Tribe were consulted regarding the APE and to identify any culturally important sites that should be considered during the survey and EIS development. ITD District 2 has been meeting quarterly with the Nez Perce Tribe to consult on planned projects since 2002. This project is included in that consultation. The dates of Tribal consultation are listed in Chapter 7, Public Involvement and Agency Coordination. The most recent Tribal consultation letters and the ITD Memorandum of Understanding with the Nez Perce Tribe are included in Appendix 1, Key Agency Correspondence and Forms.

Pre-field research including literature reviews, known historical sites, and ethnographic/ historic background were completed. Field studies were completed in 2004, 2005, 2006 and 2011 to determine cultural resource probability, identify cultural resources, document and record historic building and structures, and complete archaeological survey. In addition to visual survey, subsurface shovel testing was completed in selected locations.

The following cultural resource survey technical reports were prepared to evaluate if archaeological and historic resources are present and would be affected by the alternatives. The information from the reports is summarized in this section.

- *Historic Resources Survey update to An Historic Buildings/Structures Survey for the Idaho Transportation Department's Proposed US 95, Thorn Creek Road to Moscow, Stage 1 Project, Latah County, Idaho (November 2011)* (Cardno-Entrix 2011)
- *Cultural Resources Surveys of Idaho Transportation Department Proposed US-95, Thorn Creek Road to Moscow, Phase 1, Project Latah County Idaho* (AHS 2006)
- *Historic Buildings/ Structures Survey: US-95, Thorn Creek Road to Moscow, Stage 1* (Sharley 2005)

The technical report titled *Cultural Resources Surveys of Idaho Transportation Department Proposed US-95, Thorn Creek Road to Moscow, Phase 1; Project Latah County Idaho* (AHS 2006) was submitted to the Idaho SHPO. SHPO concurred with the suggested NRHP eligibility and determination of effects for the alternatives in January 2, 2007.

An update to the 2006 Cultural Resources Survey Technical Report was prepared in November 2011 and was submitted to SHPO for review. In their responses of January 23, 2012 and March 8, 2012, SHPO determined that one additional resource, the Mountain Mart/Goodman Oil Convenience Store, is eligible for listing on the NRHP. See Appendix 1, Key Agency Correspondence and Forms for associated documentation.

3.4.3 Existing Conditions

Cultural Resources in the APE

Of the potentially historic sites identified within the project APE, three are eligible for listing in the NRHP; the Arthur Snow Farm (house and garage), the Deesten/Davis Farmstead and the Mountain Mart/Goodman Oil Convenience Store. See the Cultural

Resources Technical Report for additional detail. Only one site, the Deesten/Davis Farm, would be affected by any of the alternatives and is further discussed in Section 4.4 Cultural Resource Effects and Chapter 5. Section 4(f) Evaluation.

Arthur Snow Farm House and Garage (IHSI #57-13692)

This residence is situated in a low density residential area in the rolling Palouse hills two miles south of Moscow. The residence was built in 1919 for Arthur Snow, an Idaho State Legislator. It is a large, well preserved craftsman style house with a matching detached garage that was constructed in 1921. The buildings were once part of a large farm complex; however, the other structures burned down in 2003. The house and garage are the only remaining structures. Removal of the primary features, including the barn, and the absence of important physical information, renders the historic farm complex as a whole ineligible for listing in the NRHP. However, the house and garage are individually eligible for listing in the NRHP under Criteria B for their association with Arthur Snow and Harold Snow, both Idaho State Legislators and influential community leaders. They are both also eligible for listing under Criteria C as excellent, intact examples of craftsman residential architecture and for their artistic merits.

Deesten/Davis Farmstead, Farmstead (Field #US-95-22)

This farmstead is located immediately west of US-95 and approximately four miles south of Moscow. It consists of eight primary buildings; a farmhouse, garage, barn, granary, chicken house, smoke house, shop, and equipment shed. The property is surrounded by actively cultivated Palouse farmland. See Exhibit 20. Deesten/Davis Farmstead as viewed from US-95.

The property also includes two groves of trees planted in the 1930s by the Civilian Conservation Corps, an orchard, cottonwoods, a conifer windbreak and a black walnut tree from Germany. The farm was originally patented to William Plummer in 1882 as a cash entry land claim (BLM 2005) and is remarkably intact. The house, barn and other primary buildings are in good condition with no intrusive modern elements. The property is eligible for NRHP listing under Criterion A, for its association with regional agricultural development. The property is also eligible under Criterion C as an excellent example of early 20th century farmstead architecture and layout.

Exhibit 20. Deesten/Davis Farmstead as viewed from US-95

Mountain Mart/Goodman Oil Convenience Store (HS-02)

The Mountain Mart site which is also known as Goodman Oil is located immediately south of the South Fork Palouse River Bridge on the east side of US-95 and is currently abandoned. The property has several buildings located on the site, including fuel pumps, garages and utility buildings. The Mountain Mart office/shop was built in 1963 and will be 50 years old by 2013. Only the office/convenience store was determined to be eligible for the NRHP. The building is octagonal construction, prefabricated materials, and a modernist vernacular design which is unusual and unique for a rural community in Idaho. The building has a circular, flat roof. Five of the sides are almost entirely glazed in metal units. Three of these sides are vertical, three are light windows, and the north and west faces have metal entrance doors at their center. The central door has a louvered ventilation window. The building is eligible under Criteria C as an excellent example of mid-century modern architectural design. The octagonal/round form, the large glass exposure, flat roof, metal components and cinderblock walls are all distinctive characteristics of the type, period and method of construction of the genre. Although a comprehensive survey of gas stations has not yet been conducted in Idaho, this example appears to be a rare survivor of the property type. See Exhibit 21. Mountain Mart/Goodman Oil Convenience Store.

Exhibit 21. Mountain Mart/Goodman Oil Convenience Store

3.5 Floodplains

3.5.1 Regulatory Framework and Policies

Floodplains are governed by the following:

- EO 11988 – Floodplain Management
- 23 CFR 650 Subpart A- Location and Hydraulic Design of Encroachments on Flood Plains
- Latah County Land Use Ordinance #269-Flood Zone Overlay

Presidential EO 11988, Floodplain Management, directs federal agencies to avoid to the extent possible adverse effects associated with floodplains and to avoid support of floodplain development.

3.5.2 Methodology

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) maps dated August 15, 1980 were reviewed. Two separate meetings with the Michelle Fusion, the Director of Latah County Planning and Zoning and Bill Belknap, the Community Development Director of the City of Moscow were conducted to discuss floodplain requirements, effects of the alternatives and potential risk.

Project-related activities are required to demonstrate that they would not cause more than a one-foot cumulative rise in the base flood elevations and that they would be compliant with the National Flood Insurance Program.

A technical report titled *Hydraulic Study for Affected Floodplains on Alternatives Carried Forward* (ITD 2012b) was completed in compliance with 23 CFR 650 part A (ITD 2012b). This report discusses the following:

- Flooding risks
- Impacts on natural and beneficial floodplain values
- Support of probable incompatible floodplain development
- Measures to minimize floodplain impacts
- Measures to restore and preserve the natural and beneficial values

3.5.3 Existing Conditions

The FEMA FIRM Maps show 100-year floodplain (Zone A) associated with the South Fork Palouse River and Thorn Creek. The South Fork Palouse River has a designated floodway in addition to the 100-year floodplain. Four floodplain areas associated with tributaries of the South Fork of the Palouse River are located on the western edge of the study area. See Exhibit 25. Floodplain Effects.

3.6 Wetlands and Tributaries

3.6.1 Regulatory Framework and Policies

Wetlands and tributaries are governed by the following:

- 23 CFR 777 – Mitigation of Impacts to Wetlands and Natural Habitat
- USDOT Order 5660.1A - Preservation of the Nation's Wetlands
- 33 CFR 325 –Processing of Department of Army Permits
- 33 CFR 328 – Definition of Waters of United States
- 33 CFR 332 -Compensatory Mitigation for Losses of Aquatic Resources; Final Rule
- 33 USC –Section 401 and Section 404; Clean Water Act
- 33 USC 403-Rivers and Harbors Act of 1899
- 33 USC 1251 -Clean Water Act (CWA)
- 33 USC 1313(d) Section 303-Water Quality Standards and Implementation Plans

- 40 CFR 230-Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged for Fill Material
- IDAPA 37.03.07-Idaho Department of Water Resources (IDWR) Idaho Stream Channel Protection Act and the Stream Channel Alteration Rules
- U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)

Waters of the US as defined by the USACE includes "waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce" [33 CFR 328.3(a)]. This includes all interstate waters, waters from which fish or shellfish could be taken and sold in interstate or foreign commerce, and all tributaries of the waters described above.

Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas [33 CFR 328.3(b)].

The Clean Water Act (CWA) establishes national goals and policies to restore and maintain chemical, physical and biological integrity of the Waters of the US. Section 401 of the CWA regulates water quality of Waters of the US. Section 402 of the CWA regulates the discharge of pollutants from point and non-point sources (National Pollution Discharge Elimination System (NPDES)). Section 404 of the CWA regulates the discharge of fill or dredged material into Waters of the US and is implemented by the USACE and EPA.

Waters of the US, including wetlands, that are jurisdictional by the USACE and would be affected, would require a permit through the USACE. Lands meeting the definition of wetland, but which are not considered jurisdictional by the USACE are still considered under 23 CFR 777 Mitigation for Wetlands and Aquatic Habitats which requires a no net loss of wetland function and value.

IDEQ is the state agency responsible for implementing the 401 certification process. IDEQ develops and enforces water quality standards that are intended to protect beneficial uses of a water body. EPA is responsible for ensuring that the standards which IDEQ adopts are aligned with the requirements of the CWA.

IDEQ water quality standards consist of three components: 1) an anti-degradation policy to maintain existing water quality independent of designated uses; 2) beneficial uses designated for a specific water body based on plants and animals present and activities taking place in the waterway; and 3) criteria to protect water quality necessary to support the designated beneficial uses (for example, limits on temperature, dissolved oxygen, pH, turbidity, and ammonia). IDEQ considers physical, chemical, and biological characteristics, geographic setting, scenic qualities and economic and public values when designating a water body's beneficial uses.

The IDEQ releases a report listing and describing impaired segments of water bodies. All impaired waterways are required to have a Total Maximum Daily Load (TMDL) prepared for each pollutant listed as impaired. TMDLs are calculations of the maximum amount of a pollutant that a water body can assimilate while still complying with water quality standards.

3.6.2 Methodology

The following wetland technical reports were prepared to evaluate wetlands and tributaries that could be affected by the alternatives:

- *Thorncreek Road to Moscow Determination of Jurisdictional Waters of the United States* (Gilmore 2005)
- *Thorncreek Road to Moscow - Wetland Functions and Evaluation* (Gilmore 2006)
- *Thorncreek Road to Moscow, Wetland Delineation Report* (Gilmore 2012).

In 2012, the earlier wetland delineations were reviewed, considering new guidance and the revised methodology (*Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008)). In addition, ITD worked with the USACE to identify tributaries and wetlands that occur in the project area. In 2012, additional function and value ratings were completed for affected wetlands. The results of the wetland delineation and the function and value assessments for the affected wetlands, were updated and compiled into one comprehensive report titled *Thorncreek Road to*

Moscow, Wetland Delineation Report (Gilmore 2012) which also contains detailed maps of the tributaries and wetlands in the study area.

Over 150 acres were evaluated for wetlands. One hundred fifteen test sites were evaluated during the 2004 through 2005 field investigations. The findings were displayed on field data sheets in Appendix C of the 2012 report. The project area was revisited on September 15 and 16, October 3, and December 5, 2011 to determine if substantial land use changes had occurred at or near the resource. The original field data sheets were reviewed based on the changes between the USACE delineation manual (Environmental Laboratory 1987) and the 2008 supplement (USACE 2008) and in light of the most recent wetland regulations and guidance.

The functions and values of the affected wetlands were assessed in accordance with the *Washington State Wetland Rating System for Eastern Washington* (Hruby 2004). This rating system assigns wetlands a category between I and IV based on how well they provide water quality, hydrologic, and habitat functions. Each function is scored on how well the wetland is providing that function and its potential to increase that function within a given area. The maximum score for water quality, hydrologic, and habitat functions are 24, 32, and 32 respectively. The higher the score and percentage of the total, the higher that wetland is functioning for the parameter. The total of the scores for the three functions determines the functional category. Category I is considered the highest quality and is the most difficult to replace. Category IV wetlands are typically disturbed and are considered the most easily replaced.

- *Category I* wetlands are those that 1) represent a unique or rare wetland type; or 2) are more sensitive to disturbance than most wetlands; or 3) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or 4) provide a high level of functions.
- *Category II* wetlands are difficult, though not impossible, to replace, and provide high levels of some functions. These wetlands occur more commonly than Category I wetlands, but still need a relatively high level of protection.
- *Category III* wetlands are 1) vernal pools that are isolated, and 2) wetlands with a moderate level of functions. These wetlands generally have been disturbed in some ways, and are often smaller, less diverse than Category II wetlands.

- *Category IV* wetlands have the lowest levels of functions and are often heavily disturbed. These are wetlands that should be replaceable, and in some cases may be improved.

3.6.3 Existing Conditions

Tributaries

The project area is in the Palouse River Watershed, Water Resource Inventory Area (WRIA) 34. The Palouse River Watershed includes the South Fork Palouse River Subbasin and the Cow Creek Subbasin. The upper three quarters of the project area is in the South Fork Palouse River Subbasin. The lower one-quarter of the project area is in the Cow Creek Subbasin.

There are two primary tributaries in the project area; the South Fork Palouse River and Thorn Creek. All other tributaries in the project area are unnamed and drain to one of these tributaries. Most of the tributaries are intermittent or ephemeral. None of the waterways are part of a National Wild and Scenic Rivers System or a river under study for designation to the National Wild and Scenic Rivers System. See Exhibit 26. Tributary Effects for locations of tributary crossings. Maps and additional detail regarding the tributaries are included in the Wetland Delineation Technical Report (Gilmore 2012).

South Fork Palouse River. The South Fork Palouse River is a perennial stream and a primary tributary to the Palouse River. The Palouse River drains to the Snake River which flows to the Columbia River. The South Fork Palouse River, the Palouse River, the Snake River and the Columbia River are considered by the USACE to be jurisdictional waters of the US.

The South Fork Palouse River has high flows in the spring and early summer and low flows during the late summer and early fall. Most of the wetlands and floodplains in the Palouse have been drained, straightened, cleared of vegetation or otherwise affected by agriculture, urbanization and associated infrastructure. These areas once retained water during high flows and released water during the low flow periods; however, farming and other developments have affected the streams, wetlands and floodplains, resulting in diminished water storage and attenuation capacity. Therefore, peak flows are intensified resulting in channel erosion, deeply incised channels and flooding (IDEQ 2007).

The IDEQ 2002 Integrated Report lists the South Fork Palouse River as a 303(d) listed [33 USC 1313(d) Section 303], impaired waterbody for sediment, nutrients, stream temperature and bacteria (IDEQ 2005b). The Watershed Assessment and TMDL for the South Fork Palouse River Watershed describes the designated beneficial uses for the South Fork Palouse River Subbasin as cold water aquatic life[10], salmonid spawning, and secondary contact recreation[11] (IDEQ 2007).

Thorn Creek. Thorn Creek is an interstate intermittent tributary to Cow Creek which is a primary tributary of the Palouse River. Thorn Creek is considered by the USACE to be a jurisdictional water of the US.

Thorn Creek is typically dry in the summer and has high peak flows following storm events. It has also been affected by agriculture, urbanization and associated infrastructure with similar intensified peak flows, high erosion, incised banks and sedimentation (IDEQ 2005a).

The IDEQ 2002 Integrated Report listed Cow Creek as an impaired water body for nutrients, habitat alteration and stream temperature (IDEQ 2005a). The Watershed Assessment and TMDL for the Cow Creek Subbasin (IDEQ 2005a) described Cow Creek's beneficial uses as secondary contact recreation and cold water aquatic life.

Wetlands

Forty-six wetlands were identified and delineated in the project area. The seventeen affected wetlands are shown on Exhibit 27. Wetland Effects. No determination regarding jurisdiction has been made by the USACE at this time; however, all of the wetlands are considered by the FHWA under 23 CFR 777, Mitigation of Impacts to Wetlands and Natural Habitat.

Wetlands may be classified by the dominant vegetation types. Two primary wetland vegetation classifications in the project area are: emergent and scrub-shrub wetlands. Emergent wetlands are characterized by low growing, non-woody vegetation such as grasses, sedges and forbs. In the project area, these wetlands are typically used agriculturally. Scrub-shrub wetlands are characterized by shrubs such as roses, hardhack or red osier dogwood.

[10]Cold water aquatic life is water quality appropriate for the protection and maintenance of a viable aquatic life community for coldwater species

[11]Secondary contact recreation may include fishing, boating, wading, infrequent swimming, and other activities where ingestion of raw water is not likely to occur

The majority of the wetlands in the project area are Category III Palustrine Emergent (PEM) wetlands associated with agricultural lands and have been altered by human disturbance. The wetlands are either being farmed or farmed to their boundaries reducing the wetland buffer and hydrologic improving capabilities. The wetlands in the northern half of the project primarily drain to the South Fork Palouse River while the wetlands in the southern half of the project primarily drain into Thorn Creek. Both of these water bodies are listed as impaired waters under Section 303(d) of the Clean Water Act [33 USC 1313(d)]. While these wetlands provide some basic functions they have all been impaired and thus their functions degraded. All but a few of these wetlands have only one vegetation class, emergent, which generally consists of crop or introduced species.

Generally, wetlands in the project area scored higher in water quality functions. This is due to the potential for the wetland to improve degraded water quality, as the two main surface waters are both 303(d) listed and surrounded by farming activities. A few wetlands have two predominant vegetation classes, emergent and scrub-shrub. These wetlands, while still impaired, offer higher functions and values to wildlife and greater diversity. These wetlands are still generally surrounded by agriculture.

The wetlands and tributaries in the project area were delineated and are described in detail in the Wetland Delineation Technical Report (Gilmore 2012). Wetlands that would be affected by any of the Action Alternatives are shown in Exhibit 27. Wetland Effects and are described below. Details regarding the other wetlands and tributaries in the project area may be found in the Wetland Delineation Report (Gilmore 2012).

Wetland 9 is a Category III, PEM, drainage way. The southern end of this wetland is being grazed while the western fringe is being farmed. This wetland is dominated by jungle-rice *(Echinochloa colona)* and reed canarygrass (*Phalaris arundinacea*). Wetland 9 scored over 50 percent for water quality functions using the Eastern Washington Wetland Rating System.

The hydrology from Wetland 9 originates near the intersection of Jacksha Road and US-95 and flows in a northerly direction. It continues toward the South Fork Palouse River through a series of wetlands, tributaries and road culverts. Wetland 9 abuts Tributary I, which drains to the South Fork of the Palouse River. The South Fork Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 10 is a Category III, PEM, grassed drainage in a gently sloped valley. It receives runoff from the east and west sides of US-95. Wetland 10 is dominated by jungle-rice grass and field horsetail *(Equisetum arvense)* and is surrounded by annual cropland. The lower portion is classified as farmed wetland. This wetland scored over 50 percent for water quality functions.

Wetland 10 borders Tributary I, which drains northwest to the South Fork of the Palouse River. The South Fork Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 13 is a Category III, palustrine scrub-shrub (PSS) wetland. It is confined by a steep slope on the north and an area with predominantly higher elevation on the south side. CRP lands are to the north and south of the wetland. There is cropland along the wetland edges with farming activities up to the grassy borders in the lower reaches. Wetland 13 is dominated by hawthorn *(Crataegus douglasii),* red-osier dogwood (*Cornus sericea)*, cow parsnip (*Heracleum maximum)*, and reed canarygrass. There are also scattered cottonwood trees in the upper portions of the drainage. This wetland scored over 50 percent for water quality functions.

Wetland 13 is contiguous with Tributary W which flows westerly toward US- 95 through a farmstead and along Zeitler Road. Tributary W continues through Wetland 34 and drains to the South Fork Palouse River through a series of open tributaries and wetlands. The South Fork Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 20 is a Category III, PEM wetland in a large drainage way. Farming activities are occurring through the wetland along most of the reach. Vegetation in the wetland is dominated by reed canarygrass and cultivated spring grain. This wetland scored over 50 percent for water quality functions.

The wetland is contiguous with Tributary N which flows in a westerly direction to the South Fork Palouse River. The South Fork Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 23 is a Category IV, PEM wetland consisting of two grassed waterways that drain in an easterly direction toward US-95. The predominant vegetation includes meadow foxtail *(Alopecurus pratensis)* and bromes (*Bromus* sp.). The northern and larger portion of the wetland is being farmed up to its border. The southern portion of the wetland is also being farmed. This wetland did not score over 25 percent for any of the functions.

Wetland 23 does not appear to have a surface connection to other waters and does not appear to be adjacent to Tributary P.

Wetland 24 is a Category III, PEM wetland that includes two north-sloping drainage ways. The western portion drains a relatively steep bowl of pastureland. The predominant vegetation includes reed canarygrass, jungle-rice grass, and grazed pasture grasses. The eastern-most portion includes a small pond and has a more gradual gradient. Both drainage patterns converge near the west side of US-95 into a relatively wide grassy area. This wetland scored over 50 percent for water quality functions.

The wetland is contiguous with Tributary Q, which flows in a northerly direction along the west side of US-95 toward Wetland 9. It then flows through a series of wetlands and open roadside ditches to the South Fork Palouse River. The South Fork Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 25 is a Category III, PEM, grassed drainage which is surrounded by cropland. This wetland is currently mowed. The predominant vegetation includes meadow foxtail and cultivated grasses for hay. This wetland scored over 50 percent for water quality functions.

The wetland drains in a northerly direction along the west side of US-95 from the toe of the slope to the east toward Clyde Road. The wetland is adjacent to Tributary R which is conveyed through a series of wetlands, open roadside ditches and culverts and to the South Fork Palouse River. The South Fork Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 26 is a Category IV, PEM, drainage surrounded by annual cropland. Farming activities are occurring through most of the wetland. A combination of hillside seeps and slow soil permeability within the cropland contribute to prolonged soil saturation into the spring. Predominant vegetation includes quackgrass (*Elymus repens)*, jungle-rice grass, spring grain, prickly lettuce (*Lactuca serriola)*, mayweed *(Anthemis cotula)*, Canada thistle *(Circium arvense)*, and field horsetail. This wetland did not score over 25 percent for any of the functions.

The wetland drains in a northerly direction along the west side of US-95 by Tributary R, to Tributary S which is conveyed through a series of wetlands, open roadside ditches and culverts and to the South Fork Palouse River. The South Fork Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 27 is a Category III, PEM, forked grassy drainage way that drains the toe slope of annual cropland across a flat area. Predominant vegetation includes wild oats *(Avena fatua)* and jungle ricegrass. A combination of upland runoff and the flat topography of the drainage way contribute to prolonged soil saturation in the spring. This wetland scored 50 percent for water quality functions.

The wetland, adjacent to Tributary T, is drained in a northerly direction along the west side of US- 95 toward the South Fork Palouse River. The runoff is conveyed through a recently created wetland along the South Fork Palouse River banks. The South Fork Palouse River is a tributary of the Palouse River. The Palouse River is a major tributary to the Snake River.

Wetland 28 is a Category III, PEM, grassy forked drainage. This wetland is contained within the lower third of a forked drainage way on the east side of US-95. The upper two-thirds of the drainage way possess wetland and tributary characteristics previously defined as PC (Prior Converted). This wetland is predominantly reed canarygrass bordered by wheat and brome species. This wetland scored 50 percent for both water quality and habitat functions.

The drainage way conveys overland flow from upper croplands in a southerly direction toward US-95. The runoff is conveyed under the highway by a culvert, connecting the surface flow to Tributary P, on to Wetland 19 and Thorn Creek. Thorn Creek flows to Union Flat Creek, a tributary of the Palouse River. The Palouse River is a major tributary to the Snake River.

Wetland 29 is a large Category III, PEM, multi-forked drainage way that carries overland flow in a westerly direction along Eid Road. The wetland consists mostly of wide grassy ditches that flow into defined narrow channels. Predominant vegetation is reed canarygrass.

A relatively large man-made pond exists near the upper portion of the tributary of the most southern fork, identified as AW (Artificial Wetland). This wetland scored over 50 percent for water quality functions.

Surface water is conveyed from the wetland through Tributary U toward US-95, traveling under the highway through a culvert toward Tributary Q, to Wetland 9 and 10, and on down Tributary I to the South Fork Palouse River. The South Fork Palouse River is a tributary of the Palouse River. The Palouse River is a major tributary to the Snake River.

Wetland 31 is a Category IV, PEM, long grassy waterway in the middle of annual cropland. Predominant vegetation includes reed canarygrass and dagger-leaf rush (*Eleocharis lanceolata)*. Hydrology for Wetland 31 originates from overland flow in a westerly direction toward US-95. The grassy drainage way is relatively flat and extends into the draw beyond the wetland boundary. This wetland did not score over 50 percent for any of the functions.

Water draining from Wetland 31 is conveyed under the highway, and continues through Wetland 10 and Tributary I toward the South Fork Palouse River. The South Fork Palouse River is a tributary of the Palouse River. The Palouse River is a major tributary to the Snake River.

Wetland 32 is a Category III, PSS wetland with an emergent component and grassed waterway. Predominant vegetation includes reed canarygrass, hawthorn and aspen (*Populus tremuloides)*. This wetland originates in the foothills of the west facing slope of Paradise Ridge. This area was defined by aerial photos as a farmed wetland (FW) and wetland (W) (USDA FSA 1979). A man-made pond is found in the upper most portion of Tributary W and is identified as an AW (Artificial Wetland). This wetland scored over 50 percent for water quality functions.

The wetland has both a brushy draw and a wide grassed waterway that conveys overland flow and hillside seeps in a westerly direction through a channelized tributary that travels through a farmstead and along Zeitler Road toward the highway through Tributary W. Tributary W drains Wetlands 13 and 32 in a westerly direction toward US- 95. It continuing through Wetland 34, flows under the highway through a culvert and to the South Fork Palouse River through a series of open tributaries (Tributary I) and wetlands (Wetland 10).

The South Fork of the Palouse River is a tributary of the Palouse River; the Palouse River is a major tributary to the Snake River.

Wetland 35 is a Category III, PEM wetland area above a man-made pond in a drainage way that comes off Paradise Ridge. Predominant vegetation includes reed canarygrass. The wetland hydrology appears to come from a hillside seep and overland flow. This wetland scored over 50 percent for water quality functions.

Wetland 35 drains to a pond, which overflows to a roadside wetland and under Cameron Road toward Tributary X. Tributary X also carries overland flow from Wetland 14 and 33. The hydrology continues to flow toward US-95 through annually cropped land, through a culvert under the highway, and through a series of open tributaries until it flows into the South Fork Palouse River. The South Fork of the Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 39 is a Category IV, PEM wetland on the edge of an annually cropped field. Predominant vegetation includes reed canarygrass and mayweed. Water appears to pond at this edge near US-95. Hydrology is from a combination of upland and roadside runoff and possibly a high water table. This wetland did not score over 50 percent for any of the functions.

The wetland is adjacent to Tributary Y, which flows along the toe of the highway slope until it crosses under the highway in a westerly direction through a culvert. It then flows through a series of tributaries and wetlands until it drains to the South Fork Palouse River. The South Fork of the Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 40 is a Category III, PEM wetland in grassed drainage surrounded by tilled agricultural land. This wetland follows a swale along the east corridor. Predominant vegetation consists of reed canarygrass and mayweed. This wetland scored over 50 percent for water quality functions.

The wetland is contiguous with Tributary AA, a farm field ditch that flows in a northerly direction eventually draining to the South Fork Palouse River. The South Fork of the Palouse River is a tributary of the Palouse River which is a major tributary to the Snake River.

Wetland 44 is a Category III, PEM, man-made pond and drainage way located just east of Zeitler Road. Predominant vegetation is reed canarygrass. This wetland scored 50 percent or higher for water quality and habitat functions.

While the pond and surrounding area is wetland, no surface water connection to other tributaries or associated wetlands could be determined.

3.7 Groundwater

3.7.1 Regulatory Framework and Policies

Groundwater is governed by the following regulations and policies:

- 33 USC 1251 Clean Water Act (CWA)
- 42 USC 300-Safe Drinking Water Act

3.7.2 Methodology

Wells were identified within the project area by utilizing data obtained from the IDEQ and IDWR. Wells within 300 feet and within the footprint of each Action Alternative were identified.

3.7.3 Existing Conditions

Aquifers

The project area includes two basalt aquifer systems that supply groundwater in the project area; the Grande Ronde and the Wanapum (Priest Rapids) aquifers. The Wanapum Aquifer overlies the Grande Ronde Aquifer. Neither of these aquifers are sole source aquifers.

Municipal drinking water is generally drawn from the deeper Grande Ronde aquifer. As groundwater withdrawals have increased to meet demands, the Grande Ronde aquifer levels have been declining at a rate of one to two feet per year in some areas indicating little recharge (Hashmi 1995).

The shallow Wanapum aquifer is a primary water source for rural residents, particularly in the eastern portion of the basin. The Wanapum aquifer responds to changes in precipitation and pumping and appears to be recharged from the surface (Palouse Water Conservation Network 2005).

Wells

The wells in the project area are domestic wells which are used as a source of potable water for households. No municipal wells that would provide public water supplies or irrigation wells are located in the study area. See Table 22. Wells in the Study Area.

Table 22. Wells in the Study Area

Corridor	Domestic
Western	30
Central	23
Eastern	31

3.8 Vegetation, Fish and Wildlife

3.8.1 Regulatory Framework and Policies

Vegetation, fish and wildlife are governed by the following:

- Technical Advisory (TA) 6640.8A - Guidance for Preparing and Processing Environmental and Section 4(f) Documents
- 16 USC 1531-1544 – Endangered Species Act (ESA)
- 16 USC Sections 1600-1614-National Forest Management Act
- 16 USC Sections 661-667e- Fish and Wildlife Coordination Act
- 16 USC Sections 668-668d -Bald Eagle Protection Act
- 16 USC Sections 703-712-Migratory Bird Treaty Act
- 16 USC Sections 1801-1882-Fishery Conservation and Management Act (1976)
- EO 13186-Responsibilities of Federal Agencies to Protect Migratory Birds
- Federal Noxious Weed Act of 1974
- Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-297)
- 49 USC 303-Policy on Lands, Wildlife and waterfowl refuges, and historic sites
- IDAPA 20.02.01-Idaho 1974 Forest Practices Act
- Idaho Code, Title 22, Chapter 24, Noxious Weeds

3.8.2 Methodology

Several technical reports were conducted by technical experts to identify vegetation, wildlife and habitat in the study area and to assess the potential effects of the alternatives. The technical reports are listed below:

Vegetation Studies

A Scientific Evaluation for Noxious and Invasive Weeds of the Highway 95 Construction Project between the Uniontown Cutoff and Moscow (January 2007). This report describes the potential weeds in the study area. It also describes the potential for the proposed project to spread weeds and discusses mitigation for the potential effects (Lass and Prather 2007).

Biological Evaluation of Plant Species and Communities of Conservation Concern in the US Highway 95 Thorncreek Road to Moscow Project Area (December 2005). This report discusses the potential occurrence and extent of Palouse remnants and rare plants in the project area. It analyzes the potential effects for the proposed project on plant species of conservation concern and remnant native plant communities that potentially provide habitat for these species (Lichthardt 2005).

Wildlife Studies

Biological Assessment, Thorncreek Road to Moscow Highway Construction Project (December 2007). This study describes the project effects to federally listed and proposed species and designated critical habitat (ITD 2007a). This report was reviewed in November 2011. USFWS provided concurrence that the findings are still valid in December 2011. USFWS provided a clarification to the Spalding's catchfly mitigation in April 2012. See Appendix 1, Key Agency Correspondence and Forms.

General Wildlife Assessment, Thorncreek to Moscow (December 2006). This report describes the effects of the alternatives to key indicator species and representative species of greatest conservation need. It also discusses potential mitigation measures (IDFG 2006).

Biological Evaluation on the Potential Impacts of Corridor Alternatives from Thorncreek Road to Moscow on Large Ungulates (December 2005). This report evaluates the potential effects of alignments through different corridors (west, central and east) on the habitat and survival of white-tailed deer (*Odocoileus virginianus*), elk (*Cervus elaphus*), and moose (*Alces alces*) in the project area (Melquist 2005a).

Biological Evaluation on the Long-eared myotis and Pygmy nuthatch (December 2005). This report describes the potential effects of the proposed project on the long-eared myotis (*Myotis evotis*) and Pygmy nuthatch (*Sitta pygmaea*) which were classified as Species of Special Concern (SSC) by the IDFG (Melquist 2005b).

Final Review of Wildlife Mitigation for the Thorncreek Road to Moscow Highway Development Project (US-95) (September 2007). This report reviews and summarizes the information in the General Wildlife Assessment (IDFG 2006) and Biological Evaluation on Potential Impacts of Corridor Alternatives (Melquist 2005a). It evaluates the effects of the alternatives to deer, elk and moose and makes mitigation recommendations (Ruediger 2007).

Assessment of Potential Big Game Effects and Mitigation Associated with Highway Alternatives from Thorncreek Road to Moscow (December 2010). This report summarizes the various wildlife reports prepared for the project and provides ITD with an independent assessment of the project's effects to potential big game. It also discusses mitigation (Sawyer 2010).

3.8.3 Existing Conditions

The project area has an elevation of between 2,600 and 3,000 feet above sea level. The primary habitat in the project area is plowed and cultivated agricultural or Conservation Reserve Program (CRP) fields. Small patches of conifers, brush, and riparian habitat are retained on the edges of fields, in gullies and on rock knobs. These patches are too small and fragmented to provide useable habitat for most large terrestrial species (Ruediger 2007).

The Palouse Bioregion

The project area is at the eastern edge of the Palouse Bioregion. The Palouse Bioregion is an area of the Columbia Plateau characterized by rolling hills of moderate to high relief, with deep soils formed from loess. Historically the land was an Idaho fescue - wheatgrass vegetation zone which is land dominated by Idaho fescue *(Festuca idahoensis)*, bluebunch wheatgrass (*Pseudoroegneria spicata)* with patches of ponderosa pine (*Pinus ponderosa*), snowberry (*Symphoricarpos albus*), hawthorn, aspen and other associated plant species (Lichthardt 2005). This vegetation zone is also classified by the Idaho Natural Heritage Program as Palouse Grasslands.

Approximately 89 percent of the ponderosa pine communities have been lost in Latah County and approximately 99 percent of the Palouse Grasslands have been converted to cultivated agricultural lands (Noss et al. 1995). Loss of Palouse Grasslands has contributed to a number of plant species associated with the Palouse Bioregion being classified as species of conservation concern (Lichthardt and Moseley 1997). The Palouse Grasslands are considered by the Idaho Natural Heritage Program to be one of the most endangered ecosystems in the US (Noss et. al. 1995).

Palouse Grassland Remnants

Thirty-two areas with remnant Palouse Bioregion vegetation were identified in the project corridor as a result of a study in 2005 (Litchtardt 2005). These Palouse remnants are referred to differently in different reports and may also be referred to as Palouse Grassland remnants or Palouse Prairie remnants. Palouse remnants may contain both grasslands as well as combinations of shrubs and trees. The identified Palouse remnants were categorized by quality. About 18.3 acres are A-ranked (highest quality) remnants and 17 acres are B or C-ranked (medium high to medium low quality). About 20 acres of grassland are too dominated by annual grasses to be considered a remnant.

There are many areas of remnant patches of grassland that do not constitute part of the Palouse Grasslands ecosystem and were not considered Palouse remnants. This was because they are actively cultivated agricultural land or they have been converted to Conservation Reserve Program (CRP) lands. These lands contain limited grass species including; bluebunch wheatgrass, big basin blue rye (*Elymus glauca*) and other planted grass species. If the remnants were infested by weeds they were also not considered Palouse remnants.

The southern end of Paradise Ridge was designated the "South End Paradise Ridge" Conservation Site by the Idaho Conservation Data Center (ICDC) in 1996. It encompasses 106 acres, a little more than half of which is grassland and is the largest of the grassland remnants in the project area. The site also has areas of open pine woodland, pine forest, hawthorn, and ninebark (*Physocarpus* (sp)).

The primary threat to the persistence of Palouse remnants in their present state is colonization by weeds. All remnants identified in the project area are bordered completely or partially by weedy vegetation. Annual grasses tend to dominate moderately moist upper slopes, and smooth brome or tall oatgrass occupy the margins of those areas. Among the perennial weedy grasses, tall oatgrass appears to be the most aggressive. The perennial grasses have most likely moved into the remnants, either by rhizomes or seed, from nearby CRP plantings. See the *Biological Evaluation of Plant Species and Communities of Conservation Concern in the US Highway 95 Thorncreek Road to Moscow Project Area* for additional information. (Lichthardt 2005).

The project area lies near a priority area for Spalding's catchfly restoration as identified in the Recovery Plan for Spalding's catchfly (Hill 2012). In 2008 USFWS with IDFG began implementing a four phased pilot project in Latah County that included 1) delineation of areas with high potential to support Palouse Grassland remnant plant species, 2) landowner contact and education, 3) field surveys and assessment of potential remnant restoration areas, and 4) development of a comprehensive conservation strategy.

As part of the pilot project, two additional studies of Palouse remnants were completed in 2011. The studies surveyed for Spalding's catchfly and identified potential sites for re-establishment of Spalding's catchfly and identified potential restoration sites. The potential restoration sites that were identified were selected based their potential to connect the Paradise Ridge with other potential remnant areas. The sites were also selected based on soils, topography, and landowner willingness. Landowner easements and agreements have been obtained to implement a variety of practices through several government programs including; Environmental Quality Incentives Program (EQIP)[12], Landowner Incentive Program (LIP)[13], Grassland Reserve Program (GRP)[14], and Partners for Fish and Wildlife (PFW)[15]. The planned and current restoration practices include farming practices to reduce erosion and sedimentation, native plant establishment, conversion of fields from non native to native seedings, planting Spalding's catchfly, ecological weed control (such as hand pulling weeds) and other activities. These activities were implemented or are planned to be implemented on portions of the sites which have landowner agreements or easements. See Exhibit 30. Planned and Current Restoration Projects. The actual restoration activities may occur on only a portion of the land that is under a landowner agreement or easement.

One site with landowner agreements for ecological weed control and Spalding's catchfly establishment is approximately 200 feet from the E-2 alignment footprint. See Exhibit 30. Planned and Current Restoration Projects.

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[12] The Environmental Quality Incentives Program (EQIP) is a voluntary program administered through the NRCS, that provides financial and technical assistance to agricultural producers through contracts up to a maximum term of ten years in length. The program plans and implements practices to assist with natural resource and farm production issues.

[13] The Landowner Incentive Program (LIP) is administered by USFWS and provides grant funds to protect and restore habitats on private lands, to benefit federally listed, proposed or candidate species or other at-risk species.

[14] The Grassland Reserve Program (GRP) is a voluntary program administered by USDA for landowners and operators to protect grazing uses and related conservation values by conserving grassland, including rangeland, pastureland, shrubland, and certain other lands. The program emphasizes support for working grazing operations; enhancement of plant and animal biodiversity; and protection of grassland and land containing shrubs and forbs under threat of conversion.

[15] The Partners for Fish and Wildlife (PFW) Program is administered by USFWS and procures short-term easements for restoration activities.

ITD, FHWA and USFWS met on July 25, 2012 and again on September 6, 2012 to discuss current and planned conservation efforts, potential project effects and to collaborate on possible mitigation strategies.

Rare Plants

Nine plant species listed by ICDC as Species of Greatest Conservation Need, are associated with the Palouse Bioregion and known to occur in Latah County (Lichthardt 2005). See Table 23. Palouse Bioregion Rare Plant Species. IDFG surveyed the project area for these species in 2005. Four of the nine target species were found in the study area; Palouse milkvetch, broad-fruit mariposa lily, Palouse thistle, and Palouse goldenweed. The area was resurveyed near the project area between 2008 and 2010 as part of the IDFG 2011 study (Hill 2011). The rare plants found in the study area are described below.

Table 23. Palouse Bioregion Rare Plant Species

Common name	Scientific Name	ICDC rank*
Jessica's aster	*Aster jessicae*	G2/S2
Palouse milkvetch	*Astragalus arrectus*	G2/G4 Review
Green-band mariposa lily	*Calochortus macrocarpus var. maculosus*	G5T2/S2
Broad-fruit mariposa lily	*Calochortus nitidus*	G3/S3
Palouse thistle	*Cirsium brevifolium*	G3/S2
Idaho hawksbeard	*Crepis bakeri ssp. idahoensis*	G4T2/S2
Palouse goldenweed	*Haplopappus liatriformis*	G2/S2
Ample monkey-flower	*Mimulus ampliatus*	G1/S1
Spalding's catchfly	*Silene spaldingii*	G2/S1 (Federally listed as threatened)

* These ranks reflect the condition of the species rangewide. G-ranks are rangewide ranks that are assigned by Nature Serve and S-ranks are statewide ranks that are assigned by the ICDC. Rankings are explained in detail in Appendix 4.

Palouse milkvetch. Palouse milkvetch is rated between imperiled and secure globally (G2/G4). Palouse milkvetch was found in two places in the study area; in a grassland remnant and on a road cut (Lichthardt 2005).

Broad fruit mariposa lily. Broad-fruit mariposa lily is considered vulnerable both globally and in Idaho State (G3/S3). Five very small populations were found in the study area, ranging from 1 to 20 individuals. This perennial occurs almost exclusively in Idaho in open habitats (Lichthardt 2005).

Palouse thistle. Palouse thistle is considered globally vulnerable and imperiled in Idaho State (G3/S2). More than 20 populations were found in occasional stands of snowberry or ponderosa pine. Palouse thistle spreads by creeping roots; therefore, it is difficult to determine what constitutes an individual. This plant occurs in grasslands and scablands[16] (Lichthardt 2005) ranging from northeast Oregon, Eastern Washington and east to Idaho.

Palouse goldenweed. Palouse goldenweed is considered both globally and state imperiled (G2/S2). It was found in all but two grassland remnants as well as many patches too small or too weedy to qualify as remnants. Moscow is near the center of the global range of this species. This perennial occurs primarily on the Palouse in rocky soils (Lichthardt 2005).

Invasive Plants

Latah County has about 260 listed non-native, invasive plant species that affect agricultural, rangeland, pastures, and forests. Sixty-four noxious weeds are listed in Latah County. Of those, five species of noxious weeds were found in the project area (Lass and Prather 2007). See Table 24. Noxious Weeds in Project Corridor.

Table 24. Noxious Weeds in Project Corridor

Common Name	*Scientific Name*	Category*
Common crupina	*Crupina vulgaris*	Control
Jointed goatgrass	*Aegilops cylindrical*	Containment
Field bindweed	*Convolvulus arvensis*	Containment
Canada thistle	*Cirsium arvense*	Containment
Yellow starthistle	*Centaurea solstitialis*	Containment

*Control =to prevent plants from seeding. Containment =to limit the area that the weeds spread.

General Wildlife Species

The study area is highly modified through agriculture, rural residences and commercial development, and nearly all of the native pine stands and grasslands have been converted to other land uses. The remaining habitat supports both indigenous and non-native wildlife species. Many species are habitat generalists which, while important locally, are mainly species already adaptable to habitat modifications, fragmentation and high levels of human use (Sawyer 2010).

[16] Terrain consisting of bare rock surfaces, with little or no soil cover and scanty vegetation, that have been deeply channeled by glacial flood waters

The *Idaho Comprehensive Wildlife Conservation Strategy (WCS)* is the State of Idaho's guiding document for managing and conserving at-risk species. It provides a framework for conserving the 229 Species of Greatest Conservation Need (SGCN) and the habitats upon which they depend. The WCS divides the state into Ecological Sections based on habitat. The US-95 Thorncreek to Moscow project area lies entirely within the Palouse Prairie Ecological Section. The WCS maps the majority of the study area as farmable land and non-native herbaceous. It lists wildlife species expected to reside in or migrate through the Palouse Prairie Ecological Section for each habitat type.

IDFG prepared a report *General Wildlife Assessment; Thorncreek Road to Moscow Project* (IDFG 2006), which evaluated the general wildlife species that could be affected by the alternatives. Of the 229 SGCN, IDFG identified species that could reasonably be expected to be present in the project area. These were used to represent the SGCN and general wildlife species. Of these, various species were expected to be present in the corridor near all, some or none of the proposed alternatives. See Table 25. Representative Wildlife Species.

Table 25. Representative Wildlife Species

Common Name	*Scientific Name*
Woodhouse's toad	*Bufo woodhousii*
Mountain quail	*Oreortyx pictus*
Peregrine falcon	*Falco peregrines*
Townsend's big-eared bat	*Corynorhinus townsendii*
Nimapuna tigersnail	*Anguispira nimapuna*
Pale jumping-slug	*Hemphilla camelus*
Fir pinwheel	*Radiodiscus abietum*
Salmon coil	*Helicodiscus salmonaceus*
Lyre mantleslug	*Udosarx lyrata*
Oregonian	*Cryptomastix mullani tuckeri*
An Oregonian (Hells Canyon)	*Cryptomastix populi*
Humped coin	*Polygyrella polygyrella*
Palouse earthworm	*Drioleirus amercanus*
Northern alligator lizard	*Elgaria coerulea*
Ring-necked snake	*Diadophis punctatus*
Swainson's hawk	*Buteo swainsoni*
Long-billed curlew	*Numenius americanus*
Short-eared owl	*Asio flammeus*
Grasshopper sparrow	*Ammodramus savannarum*
California myotis	*Myotis californicus*

Common Name	*Scientific Name*
A stonefly	*Capnia zukeli*
A stonefly	*Soyedina potteri*
A stonefly	*Capnia lineate*
A stonefly	*Perlomyia collaris*
A stonefly	*Taenionema umatilla*
A mayfly	*Paraleptophlebia traverae*
A mayfly	*Parameletus columbiae*
A spur-throat grasshopper	*Melanoplus digitifer*
A spur-throat grasshopper	*Melanoplus payettei*

Potential effects were considered for white-tail deer, elk and moose because of their high social and economic importance to the state and the region. Listed threatened and endangered species and critical habitat are described in Section 3.9 Threatened and Endangered Species. Federal candidate species are also included in the descriptions below. Federal candidate species are species for which USFWS or National Oceanic and Atmospheric Administration (NOAA) have sufficient information on biological vulnerability and threats to support a proposal to list it as threatened or endangered. However, candidate species are not yet listed, do not have protection under ESA and are precluded due to higher priorities. Details regarding the wildlife species considered are described in detail in the Wildlife Technical Reports.

Two species were found to be of particular interest and could potentially occur in the project area based on agency and public comment; the long-eared myotis (*Myotis evotis*) and pygmy nuthatch (*Sitta pygmaea*).

Long-eared myotis is a small commonly occurring forest bat that ranges from British Columbia to Baja. In Idaho it is found in a wide range of habitats including grasslands, shrub-steppe habitat, forestland, forested riparian and wetland areas, and barren land with exposed rock (Gillies 2004). A bat survey conducted on portions of the Palouse Ranger District by the USFS and IDFG suggest that the long-eared myotis is likely to occur in the study area and may utilize pine stands for roosting (Melquist 2005b).

Pygmy nuthatch is a tiny bird that ranges from British Columbia to Central Mexico. In Idaho, the pygmy nuthatch is generally limited in its distribution to the southern slope of mountains at elevations up to approximately 3,500 feet. Pygmy nuthatches require mature pine stands. In 2005, pygmy nuthatches were observed in pine stands at the southern end of the study area (Melquist 2005b).

Northern alligator lizard is a reptile that occurs from central California to southern British Columbia and east to Montana. Idaho populations occur in the Panhandle region from Boundary County south to northern Clearwater County; however, it is rarely encountered and poorly documented. It occurs in coniferous forests, often in clearings or along forest edges. Sites typically have a prominent understory with leaf litter, bark, rotting logs or talus. They are thought to consume a variety of arthropods and perhaps mollusks and earthworms. There are no known occurrences of northern alligator lizard in the project area; however the pine stand in the southern end of the study area may be considered suitable habitat (IDFG 2006).

Wolverine. Wolverine was listed as a federal candidate species under the Endangered Species Act in December of 2010. They occur within a wide variety of habitats, primarily boreal forests, tundra, and western mountains throughout Alaska and Canada. However, the southern portion of the range extends into Washington and the northern Rocky Mountains in Idaho, Montana, and Wyoming. Wolverines tend to live in remote and inhospitable places away from human populations. They naturally occur at low densities and are rarely and unpredictably encountered. Female wolverines use birthing dens excavated in deep snow. Persistent, stable snow greater than five feet deep appears to be a requirement for birthing dens, because it provides security for offspring and buffers cold winter temperatures.

Wolverines travel long distances over rough terrain and deep snow. The availability and distribution of food is likely the primary factor in determining wolverine movements and home range size; however, gender, age, and differences in habitat are also factors (USFWS 2010).

There are no documented occurrences of wolverine near the project area. The project area is primarily highly disturbed, cultivated, farmland without a persistent, deep snow pack. Therefore wolverine and its habitat have a low likelihood to be present in the project area.

Yellow billed cuckoo. The Yellow billed cuckoo is a federal candidate species and a State of Idaho Species of Special Concern. It prefers treed, riparian corridors with a heavy understory (Anderson 1989). Dense understory is important for nest site selection.

Cottonwood trees are important for foraging habitat. Nesting pairs require a minimum of five acres of prime riparian habitat. There is riparian habitat with shrubs in the study area that could offer potential habitat for the species. However there have been no documented occurrences near the project area.

Ungulates

Independent studies of big game or ungulate (i.e., moose, elk, and white-tail deer) effects were conducted by Dr. Wayne Melquist (Melquist 2005a) and Dr. Bill Ruediger (Ruediger 2007). Both studies concluded that the project area does not include critical big game habitat or known migration corridors.

White-tail deer. Compared to elk and moose, white-tail deer are less affected by human disturbances. They thrive in agricultural and forested areas that contain adequate amounts of woody cover and herbaceous forage (Demarais et al. 2000). White-tail deer need some structural cover adjacent to them in order to take full advantage of their foraging opportunities (Compton et al. 1988, Dusek et al. 1989, Vercauteren and Hygnstrom 1998). Because whitetails tend to occupy the lower elevations, unlike elk, they are not often forced to migrate in winter. Instead, they will concentrate in timber where snow is less deep (Melquist 2005a).

Moose. Moose prefer shrubby forests with nearby lakes, wetlands, and bogs. Moose diets consist primarily of woody regrowth (e.g., willow, aspen or fir) that follow disturbances such as fire, floods, and logging (Franzmann 2000). Moose commonly use open areas to feed on grasses, sedges, and forbs, then will retreat to the security of tall shrubs and forests to rest. They migrate primarily along or between riparian areas and wetlands (Crenshaw pers. comm. 2005). While random movements and dispersal by moose likely occur, the timing and direction of such movements are unpredictable (Melquist 2005a).

Elk. Elk rely heavily on forest cover and rugged terrain for avoiding human disturbances (Skovlin et al. 2002) and predators (Creel et al. 2005 and Kauffman et al. 2007). Elk movements in and around the project area are often dictated, in large part, by the location and distribution of agricultural crops. Although elk can thrive in non-forested regions, they rely on mature shrub communities and topography to provide adequate security cover (McCorquodale et al.1986, Sawyer et al. 2007).

Available Ungulate Habitat

Deer, elk and moose habitat should include four basic components; food, cover, water and space. The arrangement of these components in the project area can influence foraging behavior and movement. The categories that were used to rank the quality of habitat for target big game species are described below:

- *Poor* – does not provide basic habitat components and does not support big game in large numbers or on a year round basis
- *Marginal* – provides some basic habitat requirements but is limited in quantity and quality. Area is unable to support measureable numbers year-round or seasonally
- *Moderate* – provides reasonable habitat and has the potential to support big game on year-around or seasonal basis
- *Excellent* – provides an abundance of high-quality habitat and supports big game on a year-round or seasonal basis. (Sawyer 2010)

Table 26. Quality of Available Ungulate Habitat indicates the overall quality of habitat for each ungulate species in the western, central and eastern corridors. The topography and general habitat components utilized by ungulates are summarized below:

Table 26. Quality of Available Ungulate Habitat

Corridor	Habitat Quality		
	Moose	Elk	White-tail deer
Western	Poor	Poor	Marginal
Central	Poor	Poor	Marginal
Eastern	Marginal	Marginal	Moderate

Western Corridor

The western corridor is characterized by gentle to rolling topography. It is primarily cropped agricultural fields with sparse rural residences. It is used for seasonable foraging by ungulates. Small patches of suitable ungulate habitat are located in Washington State outside the project area (Melquist 2005a).

IDFG personnel have occasionally observed moose and elk in the general vicinity but there is no evidence that they utilize the western corridor on a regular basis. White-tail deer are believed to utilize the western corridor on a year-round basis (Sawyer 2010).

Central Corridor

The central corridor is characterized by rolling topography. It is also primarily agricultural fields with sparse rural residences. It has more development as it is closer to the existing US-95 corridor.

IDFG personnel have observed moose and elk in the general vicinity, but there is no evidence that they utilize the central corridor on a regular basis. White-tail deer are believed to utilize the central corridor on a year-round basis (Sawyer 2010).

Eastern Corridor

The eastern corridor is characterized by rolling topography. It is also primarily agricultural fields but has more CRP enrolled land that may be utilized by ungulates compared to the western and central corridors. It also has several wooded draws and small ponds. Further from the project, habitat exists near Tomer Butte north of Highway 8 and east of Paradise Ridge.

IDFG personnel have observed moose and elk on Paradise Ridge, but the extent to which they use the area is unknown. Most big game abundance estimates are derived from aerial surveys, typically flown during the winter months while animals are congregated and more visible.

The project area has not been included in moose or deer surveys conducted by IDFG. The area is part of a larger elk unit that is stratified into high, medium, and low-density strata and flown each year. However, survey emphasis is placed on the high and medium-density strata. Since the eastern corridor and Paradise Ridge are part of a low-density stratum (Crenshaw pers. comm. 2005) there is no elk abundance data specific to the eastern corridor.

The number of moose and elk that utilize Paradise Ridge is so low, and use is so unpredictable, that capturing an adequate sample of animals is not feasible. Nonetheless, moose and elk use is more likely to occur in the eastern corridor compared to the western and central corridors. White-tail deer utilize the eastern corridor on a year-round basis (Sawyer 2010).

Ungulate Movement

Varieties of habitat components are utilized by ungulates and may affect their movement in the project area. Paradise Ridge contains a mixture of tree stands, shrubs, grasslands and agricultural fields. Man-made ponds, patches of suitable habitat and forested draws are also located on the eastern side of the project area near Paradise Ridge. Although big game likely travel along the wooded draws that extend west from Paradise Ridge, the draws do not connect Paradise Ridge with other patches of higher quality habitat to the west.

Based on the distribution of suitable cover and habitat, elk and moose could travel between Paradise Ridge, northeast towards Tomer Butte or southwest to the small patches of suitable habitat in Washington State. The closest cover in the Paradise Ridge area to the complex of habitat in Washington is a small pine stand located just north of Eid Road. Ungulates would likely utilize the small patches of trees or shrub habitat for cover while grazing in the agricultural fields nearby. Moose are expected to only have occasional random movement through these areas. Deer move in all directions to and from Paradise Ridge and the patches of Washington habitat during all times of the year (Melquist 2005a).

The project area is located in a low priority wildlife linkage area of US-95 identified by IDFG. The number of wildlife collisions in this linkage area was much less than other segments of US-95 or similar type highways. See Section 3.10 Transportation for additional information regarding wildlife collision data and the Safety Technical Report for details.

Aquatic Species

Table 27. Fish Species Occurring in the South Fork Palouse River lists the fish species known to occur in the South Fork Palouse River. The only salmonid native to the Palouse River is an isolated population of Yellowstone cutthroat trout; however, it does not occur in the South Fork Palouse River. Idaho State Water Quality Standards do not distinguish between native and introduced salmonids for the designation and protection of salmonid spawning.

Table 27. Fish Species Occurring in the South Fork Palouse River

Common Name	*Scientific Name*	Status
Longnose dace	*Rhinichthys cataractae*	Native
Speckled dace	*Rhinichthys osculus*	Native
Redside shiner	*Richardsonius balteatus*	Native
Largescale sucker	*Catostomus macrocheilus*	Native
Bridgelip sucker	*Catostomus columbianus*	Native
Brook trout	*Salvelinus fontinalis*	Introduced
Brown trout	*Salmo trutta*	Introduced
Rainbow trout	*Oncorhynchus mykiss*	Introduced
Northern pike minnow	*Ptychocheilus oregonensis*	Introduced

Source: Palouse River Watershed Assessment and TMDLs, February 2007

3.9 Threatened and Endangered Species

3.9.1 Regulatory Framework and Policies

Threatened and endangered species are governed by the following:

- 16 USC 1531-1544-Endangered Species Act
- Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-297)

The ESA directs federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the existence of any threatened or endangered species, or result in the destruction or modification of their critical habitat.

3.9.2 Methodology

A Biological Assessment (BA) was prepared for the proposed project in February 2007. The purpose of the BA was to analyze the potential effects of the proposed project on threatened, endangered, proposed, and candidate species and designated critical habitat. The BA was submitted to USFWS for review. USFWS concurrence was received on March 2007. The BA was reviewed again in November 2011 and resulted in a verification email from USFWS that the original effect determination is valid. A clarification to the proposed conservation measures outlined in the 2007 BA, and associated concurrence letters were provided in an email on April 2012. See Appendix 1, Key Agency Correspondence and Forms.

In assessing potential effects to listed species, one of the following effects findings is required:

- "No effect" means there will be no effects, positive or negative, to listed or proposed resources. Generally, this means no listed resources will be exposed to the action and its environmental consequences.
- "May affect, but not likely to adversely affect" means that all effects are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated. Discountable effects are those extremely unlikely to occur.
- "May affect, and is likely to adversely affect" means that listed resources are likely to be exposed to the action or its environmental consequences and will respond in a negative manner to the exposure.

3.9.3 Existing Conditions

Table 28. Federally Listed Threatened and Endangered Species shows species listed as threatened or endangered and designated critical habitat in Latah County, Idaho according to USFWS and NOAA. Federal candidate species are described in Section 3.8 Vegetation, Fish and Wildlife. If the federal candidate species are listed before construction and the project could result in an effect to the species' the BA will be amended.

Table 28. Federally Listed Threatened and Endangered Species

Common Name	*Scientific Name*	Federal Status
Canada lynx	*Lynx Canadensis*	Listed Threatened
Spalding's catchfly	*Silene spaldingii*	Listed Threatened
Water howellia	*Howellia aquatilis*	Listed Threatened
Steelhead trout	*Oncorhynchus mykiss*	Listed Threatened
Steelhead trout	*Oncorhynchus mykiss*	Designated Critical Habitat

Species descriptions and general habitat requirements are summarized below:

Canada lynx. The Canada lynx habitat occurs in older dense primarily coniferous/boreal forests with downed trees located above elevations of 4,000 feet. The lynx utilize primarily Engelmann spruce, subalpine fir, and lodgepole pine habitats. The lynx's population and distribution is highly dependent on the distribution of its primary food source, the snow shoe hare, and to a lesser degree, other small mammals and birds.

The project area is located on agricultural land less than 3,000 feet in elevation and is located greater than 20 miles from the nearest potential Lynx Analysis Unit (ITD 2005) (USFWS 2009).

Spalding's catchfly. Spalding's catchfly typically occurs in open native grasslands with minor shrub components occasionally with scattered conifers. The majority of the project area is agricultural lands; however, there are CRP lands, grasslands, scattered ponderosa pine stands and Palouse remnants that offer potential habitat for Spalding's catchfly.

The larger remnant portions of grassland are found along the south end of Paradise Ridge. Smaller remnant populations are scattered across the south end of the project. The project area was surveyed for Spalding's catchfly during the summer of 2005. No Spalding's catchfly plants were found. Two field visits were conducted in 2006 which resulted in the discovery of a Spalding's catchfly population on Clyde Hill between the W-4 and C-3 alignments, but outside of the alignment footprints. The next closest known occurrences of the species are 10 miles from the project area in Genesee and 15 miles west of the project area near Colton, Washington (ITD 2005). USFWS and IDFG completed additional surveys from 2008 to 2010; however no new plants were identified in the project area (Hill 2012).

Water howellia. Water howellia occurs in wetlands within forested, channeled, scablands. It is mostly found in partly shaded vernal pools or shallow ponds that hold water into mid-summer but dry out by September. The only area where water howellia could potentially occur in the project area is the floodplain of the South Fork Palouse River. However, the floodplain is actively cultivated and the stream is channelized. It is dominated by reed canarygrass, a non-native invasive weed which does not provide suitable habitat. Therefore it is highly unlikely that water howellia is present (ITD 2005).

Steelhead Trout and Designated Critical Habitat. NOAA designated critical habitat for steelhead on November 30, 2004. Designated critical habitat included areas in Latah County. The nearest occupied habitat is within the Snake River Basin Steelhead Evolutionary Significant Unit. The Palouse Subbasin habitat was specifically excluded from the designated critical habitat in the final rule for the designation of Critical Habitat in the Federal Register [50 CFR Part 226] in 2005 (NOAA 2012).

3.10 Transportation

3.10.1 Regulatory Framework and Policies

Transportation is governed by the following:

- FHWA T 6640.8a, NEPA Implementation-Guidance for Preparing and Processing Environmental and Section 4(f) Documents

FHWA T 6640.8a requires analysis of changes to travel patterns and accessibility, effects to highway and traffic safety for bicyclists and pedestrians, and overall public safety (FHWA 1987).

3.10.2 Methodology

Data on existing highway and roadway facilities were obtained from ITD, Latah County, the City of Moscow, and local highway districts. Information regarding transit was obtained by interviewing the Moscow Valley Transit and Moscow Transportation Commission. Existing access information was gained from field observations, aerial photographs and review of transportation plans. In addition a technical report was developed to evaluate traffic operations and safety within the project corridor. The technical report is titled, *US-95 Thorncreek Road to Moscow; AASHTO Highway Safety Manual Analysis for Alternatives Carried Forward* (ITD 2012).

3.10.3 Existing Conditions

Safety

Crash data between 2002 and 2011 shows that this section of US-95 averages 22 crashes per year and would reach 24.8 crashes per year by 2017. This is approximately 1.85 crashes per million vehicle miles (acc/mvm) which is greater than the 1.22 acc/mvm statewide average for a similar two-lane, two-way rural highways with similar ADTs. Safety issues within the study area relate primarily to the road geometry and accesses onto the roadway. Table 29. Crash Severity Data and Table 30. Crash Data summarizes the crash types and severity as well as contributing conditions (ITD 2012a).

Table 29. Crash Severity Data

Year	Total	Fatal	Type A	Type B	Type C	PDO
2002	14	0	3	3	2	6
2003	28	1	1	4	5	17
2004	21	0	1	4	3	13
2005	22	0	1	3	4	14
2006	14	1	3	2	1	7
2007	33	0	4	7	7	15
2008	26	0	3	2	5	16
2009	22	0	0	3	2	17
2010	26	1	2	5	6	12
2011	14	2	0	0	1	11
Total	**220**	**5**	**18**	**33**	**36**	**128**

Type A - Incapacitating injury but no fatality such as a spinal injury
Type B - Evident injury that is non-incapacitating such as a minor injury like a broken arm
Type C - Possible injury that is not obvious at the scene
PDO-Property damage only with no injury.

Table 30. Crash Data

Year	Wildlife	Intersection related*	Head-ons	Negotiating a curve	Inclement Weather or Road Conditions
2002	2	0	1	4	10
2003	3	4	0	19	18
2004	3	2	0	4	14
2005	4	4	0	5	9
2006	1	1	1	5	6
2007	3	5	2	13	19
2008	3	2	0	9	14
2009	6	1	1	11	12
2010	4	3	3	12	18
2011	2	0	0	3	8
Total	**31**	**22**	**8**	**85**	**128**

*Crashes occurred either at/in an intersection.

The crashes that have occurred on the existing alignment over the past 10 years appear to be random in nature and include head-on crashes, sideswipes, rear end turning, overturning, run off the road to the ditch and embankment, among other crash types.

Twenty-two crashes occurred due to access issues. These accidents occurred either at an intersection, because of an intersection or at a private access point. Accidents at intersections tend to have a higher severity than accidents outside of intersections. Ten percent of these intersection-related crashes are rated as Type A for severity. Approximately 80 percent of these intersection related crashes occurred at private approaches (ITD 2012a).

There were eight head-on collisions which generally had the highest severity rating of all types of accidents. These types of accidents are generally associated with passing maneuvers. By adding a lane in each direction and separating the direction of travel, the frequency of these accidents will be greatly reduced (ITD 2012a).

The National Highway Traffic Safety study on the cost of crashes shows that society generally pays for 75 percent of crash costs. Economic values for crashes in the project area have been calculated by crash severity. Fatal accidents in the project area cost approximately $6,000,000 whereas property damage only crashes cost approximately $6,000 per crash in 2010 (ITD 2012a).

Three High Accident Locations (HALs) are located within the project limits (see Table 31. High Accident Locations (HALs). These segments have the highest crash rates in ITD District 2 and are in the top 13 highest crash locations in the State of Idaho. The crash rates in these locations and throughout the corridor are expected to increase as traffic volumes increase (ITD 2012a).

Table 31. High Accident Locations (HALs)

Milepost Location on US-95	HAL Ranking in Idaho
337.67 - 338.17	6
338.67 - 339.62	13
340.62 - 341.12	4

Accidents near MP 339.1 and MP 344.0 are primarily caused by failure to negotiate the existing curves. Most of these accidents can be attributed to curves in the project area that have substandard geometry and narrower than standard shoulders. Between 2002 and 2011 approximately 40 percent of the accidents in the project area occurred while a driver was negotiating a curve.

IDFG identified four locations as ungulate crossing areas in Latah County through their Fish and Wildlife Linkage Area Project (Geodata 2008). US-95 Thorncreek to Moscow between MP 340 and 343.3 was identified as a low priority linkage area. The frequency of wild animal crashes in the project area is much less than many other sections of US-95 and many other highways in Idaho (Ruediger 2007). See Table 32. Crashes by Ungulate Crossing Areas in Latah County for a comparison between different US-95 segments identified by IDFG as Wildlife Linkage Areas in Latah County.

Table 32. Crashes by Ungulate Crossing Areas in Latah County

Ungulate Crossing Area on US-95	Total Wild Animal Crashes	Linkage Priority Status
Marsh Hill (MP 367.1 -370.1)	34	Moderate
Crooks Hill (MP 356.0 – 359.0)	14	Low
Steakhouse Hill (MP 349.7-352.7)	48	Moderate
Thorncreek to Moscow (MP 340 -343.3)	17	Low

Crash data from 2002 thru 2011 indicated that there were 437 wildlife crashes along US-95 in District 2. Of those, 37 occurred within the project limits. None involved injuries. Based on the low severity and randomness of the wildlife crashes, they are not anticipated to be a primary factor in the evaluation of the alignment alternatives. See Section 3.8, Vegetation, Fish and Wildlife and the Safety Technical Report for additional information.

Highway Capacity and Operations

With the existing Average ADT of 5364, the current facility operates at a LOS-C, which is high-density traffic flow. Approximately six percent of the vehicle traffic is commercial and 94 percent is estimated to be passenger vehicles. At LOS C, speed and freedom to maneuver are severely restricted and the driver experiences a generally poor level of comfort and convenience. Time spent following slower vehicles is noticeably longer and occurs more frequently. With LOS C, there are few gaps in traffic to allow for passing, increasing overall delay.

The existing roadway consists of two 12-foot undivided travel lanes with two foot shoulders. The clear zone and shoulder width, which are important elements for safety, vary throughout the corridor and do not meet AASHTO standards[17]. This two-lane segment of

[17]AASHTO standards are outlined in the Roadside Design Guide 2011 (4th Edition)

US-95 is a bottleneck for the four-lane highway segments at the northern and southern ends of the project.

Access and Mobility

Within Idaho, US-95 is classified as a principal arterial, providing the only continuous north-south highway connection between the Idaho Panhandle and the rest of the state. It supports multiple local uses, including primary access to agricultural, residential, commercial and industrial land located directly adjacent to the highway. Within the City of Moscow, US-95 connects with SH-8 which is a major east west highway.

This stretch of US-95 is defined by ITD as a principal arterial. Access standards developed by ITD require no more than three approaches per mile in rural areas and four approaches per mile in urban areas (ITD 2002). There are currently 66 at-grade intersections and approaches (public, commercial and field) in this 6.34 mile segment of US-95. Between 2002 and 2011 there were 22 crashes directly associated with private approaches or intersections (ITD 2012a).

The north end of the project is the most densely populated area. It has the highest number of access points and the highest number of intersection related crashes. The southern end of the project with its closely spaced approaches onto US-95, have also resulted in a high number of intersection related crashes. Currently, the many approaches do not meet the ITD Access Control Policy and contribute to intersection related conflicts.

The Latah County Comprehensive Plan requires that limits should be placed on the number of access points to state and federal highways; and encourages bike and pedestrian routes as transportation options (Latah County 2010).

Bicyclists and Pedestrians

The existing US-95 travels primarily through an agricultural area and there are no formal bicycle and pedestrian facilities along the highway corridor. Currently bicyclists and pedestrians must use the shoulders which vary through the corridor. The shoulders are not striped to accommodate dedicated bicycle or pedestrian paths.

Mass Transit

There is currently no mass transit available in the study area. Moscow Valley Transit had bus routes between Moscow and Lewiston; however, the service was discontinued in 2010 due to low ridership and lack of funding. The City of Moscow operates a small vanpool between Moscow and Lewiston through the Palouse-Clearwater Environmental Institute. Palouse Rideshare, an on-line carpooling match program, is available for commuters travelling the same routes on a regular basis.

Weather Conditions

During the public meetings held from 2004 to 2006, weather conditions as they affect safety were a major topic of concern. The public expressed concern that the topographic differences between locations of the different alternatives could influence safety differently.

Approximately 57 percent of crashes during the past 10 years occurred during inclement weather where the police reports list snow, rain, or fog as the weather condition during the crash incident. ITD commissioned the Idaho State Climatologist and Registered Professional Engineer, Dr. Russell Qualls, to study the weather patterns in the study area. His report titled *Final Report for Weather Analysis of Proposed Realignments of U.S. Highway 95; Thorncreek Road to Moscow* (Qualls 2005) stated that there were three distinct weather corridors in the project study area.

The weather corridors do not directly relate to the corridors of the three Action Alternatives. The corridors included a western corridor, eastern corridor and Reisenauer Hill which is representative of the southern two fifths of the study area. The C-3 and E-2 Alternatives were both within the eastern weather corridor. Wind, precipitation, fog and snow were evaluated to determine if there were differences in conditions between the corridors.

Wind speeds were similar between all corridors and existing US-95. Precipitation studies showed that precipitation in the eastern corridor was the greatest and was approximately 25 percent more than the western corridor and near Reisenauer Hill. There were fewer hours of dense fog in the lowland areas but the worst fog in the study area was located in the southern project area south of Eid Road which is common to all alternatives.

Snow accumulation is primarily a function of the amount of precipitation and the air temperature while precipitation is falling. Measurements during the study regularly showed the air temperature in the western corridor as 10 to 15 degrees Fahrenheit less than the air temperature in the eastern corridor. The study showed that the eastern corridor was freezing four percent more than the western corridor; however, it was more common for all the corridors to be freezing at the same time. The data regarding snow accumulations showed that snow melts off most slowly from steep north-facing slopes and most quickly from steep south-facing slopes, with gradual variation between these extremes.

Icy road conditions may result from condensation on road surfaces during freezing conditions. Reisenauer Hill had the highest total number of hours with frost conditions, followed closely by the western corridor. The southern portion of the study area has the most severe frost conditions. E-2 and C-3 are included in the eastern corridor for weather and would both have less than half the number of hours with frost conditions than Reisenauer Hill and the western corridor. See the Weather Technical Report for more detail.

3.11 Visual Quality

3.11.1 Regulatory Framework and Policies

Visual quality is governed by the following:

- 23 USC-131 Control of Outdoor Advertising
- 23 USC-136 Control of Junkyards
- 23 CFR-750-Highway Beautification Act
- FHWA's visual quality assessment methodology
- Context Sensitive Solutions (CSS)
- Technical Advisory (TA) 6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents

3.11.2 Methodology

A technical report titled *U.S.-95 Thorncreek Road to Moscow Project Final Visual Resources Report* (December 2005) was prepared and documents the methods and findings of the visual quality analysis. The purpose of the visual analysis is to assess the existing visual resources of the project corridor and to identify and describe positive and negative visual effects that may occur for each of the alternatives.

Investigators completed site visits, reviewed aerial photographs and developed a three-dimensional (3-D) virtual model that was used at public meetings. The analysis consisted of two phases; an inventory and an assessment of data. During the inventory, investigators identified key observation viewpoints, assessed project visibility, variety classes and distance zones. See Table 33. Visual Variety Classifications. During the second phase, data was analyzed to determine the potential effects of each alternative to visual resources. See the Visual Resources Technical Report.

Table 33. Visual Variety Classifications

Variety Classification	Description
Class A	These are areas where features of landform, vegetation patterns, and rock formations are outstanding within the study area. These features are typically unique and dominate the landscape.
Class B	These are areas where features contain variety in form, line, color, and texture or combinations of these. These features tend to be common throughout the study area.
Class C	These are typically areas with minimal variety in form, line, color, and texture or areas that have been substantially altered by human presence. These areas are typically associated with urban areas such as the City of Moscow.

Distance zones were established because visual perception of form, texture, color, and other visual criteria change as distance from a viewpoint increases. There are four thresholds:

- Extreme Foreground (0 to 0.25 mile)
- Foreground (0.25 miles to 0.5 mile)
- Middle ground (0.5 to 1 mile)
- Background (1 to 3 miles)

After areas were delineated according to project visibility, variety class, and distance zone, the visual effects from different features of the alignments were evaluated.

3.11.3 Existing Conditions

The rolling hills of the Palouse and small farms characterize much of the landscape. Paradise Ridge, a prominent feature, is located outside of the study area further to the east. Dense urban areas associated with the City of Moscow are located to the north.

Key observation viewpoints where viewers who are most sensitive to visual change or where viewers believed to have a high concern for visual change were most likely to be found, were identified. The two key observation viewpoints for this project were identified as residential and recreation viewpoints.

Residential viewers included urban dwellers found in and around the City of Moscow and rural dwellers associated with outlying areas and farms. Recreation viewpoints are typically associated with parks, golf courses, trails and scenic overlooks. Viewers at these viewpoints are concerned with visual impacts because these impacts influence their perception of the recreation experience. Several parks considered as recreation viewpoints are:

- Frontier Park
- Paradise Ridge Road (bicycling and hiking)
- University of Idaho Golf Course
- University of Idaho Arboretum

See Exhibit 19. Points of Interest for locations. See the Visual Resources Technical Report for additional information.

Information from the photogrammetric review, 3-D virtual model, and site visits were used to delineate areas into three variety classes; A, B, and C as described below:

A. The upper portions of Paradise Ridge were the only areas delineated as Class A. The high diversity in landform, vegetation, and uniqueness to the study area contributed to this classification.
B. The rolling hills of the Palouse farmland and the lower slopes of Paradise Ridge were classified as B. While common to the Palouse country, these areas exhibit variety in color, texture, and landform.
C. The urban areas associated with the City of Moscow were classified as C. These areas are heavily altered, dominated by structures, roads, and other man-made amenities.

3.12 Noise

3.12.1 Regulatory Framework and Policies

Noise is governed by the following:

- 23 CFR 772-Procedures for Abatement of Highway Traffic Noise and Construction Noise
- ITD Traffic Noise Policy

- Technical Advisory (TA) 6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents

23 CFR 772 Procedures for the Abatement of Highway Traffic and Construction Noise outlines the FHWA noise regulations. It contains the criteria used for establishing noise impacts and mitigating those impacts.

FHWA and ITD require a traffic noise analysis of federally funded projects or federal aid highway projects that construct new highways or reconstruct existing highways if the project would significantly change either the horizontal or vertical alignment or increase the number of through-traffic lanes.

The FHWA has established NAC standards for several categories of land use activities. See Table 34. FHWA Noise Abatement Criteria (NAC). A traffic noise impact occurs when the existing or future noise levels approach (1 dBA below the FHWA NAC) or exceed the FHWA Noise Abatement Criteria (NAC) or when the predicted future traffic noise levels substantially exceed the existing noise levels, even if the predicted noise levels may not approach or exceed the FHWA NAC.

Table 34. FHWA Noise Abatement Criteria (NAC)

Activity Category	L_{eq} (dBA) FHWA	Evaluation Location	Description of Activity Category
Category A	57	Exterior	Land on which serenity and quiet are of extraordinary significance and serve an important need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
Category B	67	Exterior	Residential
Category C	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
Category D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
Category E	72		Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F

Activity Category	L_{eq} (dBA) FHWA	Evaluation Location	Description of Activity Category
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	--	--	Undeveloped lands that are not permitted
Substantial Increase	15		A substantial increase of 15 dBA over the existing noise levels

Source: 23 CFR 772 and ITD Traffic Noise Policy

3.12.2 Methodology

Noise is defined as unwanted sound. There are several different ways to measure noise, depending on the source of the noise, the receptor, and the reason for the noise measurement. Noise in these analyses was measured in terms of sound pressure levels expressed in A-weighted decibels (dBA). Noise levels stated in terms of dBA reflect the response of the human ear by filtering out some of the noise in the low and high frequency ranges that the ear does not detect well.

A technical report titled *Analysis of Noise and Impacts US-95 Thorncreek Road to Moscow* was prepared in 2012 to evaluate the existing noise conditions and to determine if the alternatives, including the No Action Alternative, would result in noise impacts meeting or approaching the FHWA Noise Abatement Impact Criteria (NAC).

The noise analysis was performed in accordance with 23 CFR 772 and the ITD Traffic Noise Policy dated May, 2011. Field measurements were taken and a computer noise analysis was performed using the FHWA Traffic Noise Model (TNM) 2.5. The model was used to predict noise impacts to sensitive receptors in the project area in 2010 and the design year of 2037 for all of the alternatives.

Receptors within a 300 foot buffer of each alignment were modeled. Vehicle speeds were 60 mph for the existing roadway and 65 mph for the No Action and Action Alternatives. The speed limits changed to 45 mph at the approach to Moscow, which differs for each alignment. Traffic volume input into the TNM model is shown in Table 35. TNM Model Traffic Volume Inputs.

Table 35. TNM Model Traffic Volume Inputs

Thorncreek Road to end of New Alignment		
	2010 ADT	**2037 ADT**
Cars	4,621 (94.3%)	7,223 (92.5%)
Medium Trucks	83 (1.7%)	164 (2.1%)
Heavy Trucks	196 (4.0%)	422 (5.4%)
	2010 DHV	**2037 DHV**
Cars	534 (94.3%)	835 (92.5%)
Medium Trucks	10 (1.7%)	15 (2.1%)
Heavy Trucks	23 (4.0%)	35 (5.4%)
End New Alignment To Eid Road		
	2010 ADT	**2037 ADT**
Cars	4,621 (94.3%)	7,235 (92.5%)
Medium Trucks	83 (1.7%)	164 (2.1%)
Heavy Trucks	196 (4.0%)	422 (5.4%)
	2010 DHV	**2037 DHV**
Cars	534 (94.3%)	836 (92.5%)
Medium Trucks	10 (1.7%)	15 (2.1%)
Heavy Trucks	23 (4.0%)	35 (5.4%)
Eid Road To Clyde Road		
	2010 ADT	**2037 ADT**
Cars	4,998 (94.3%)	7,804 (92.5%)
Medium Trucks	90 (1.7%)	177 (2.1%)
Heavy Trucks	212 (4.0%)	456 (5.4%)
	2010 DHV	**2037 DHV**
Cars	576 (94.3%)	900 (92.5%)
Medium Trucks	10 (1.7%)	16 (2.1%)
Heavy Trucks	25 (4.0%)	38 (5.4%)
Clyde Road To Palouse River Road		
	2010 ADT	**2037 ADT**
5,640 (91.7%)	6,129 (94.3%)	9,454 (92.5%)
148 (2.4%)	111 (1.7%)	215 (2.1%)
362 (5.9%)	260 (4.0%)	552 (5.4%)
2017 DHV	**2010 DHV**	**2037 DHV**
660 (94.3%)	700 (94.3%)	1,083 (92.5%)
12 (1.7%)	12 (1.7%)	20 (2.1%)
28 (4.0%)	30 (4.0%)	46 (5.4%)

Source: Idaho Transportation Department 2012a

3.12.3 Existing Conditions

The results of the FHWA TNM 2.5 computer model analysis for existing conditions are shown in Table 36. Existing Noise Levels. The results of the FHWA TNM 2.5 analysis indicated that currently seven receptors approach or exceed the FHWA NAC, indicated by the bolded receptors in Table 36. Existing Noise Levels. Noise Receptor Locations are shown in Exhibit 22. Noise Receptor Locations. See the Noise Technical Report for additional detail.

Table 36. Existing Noise Levels

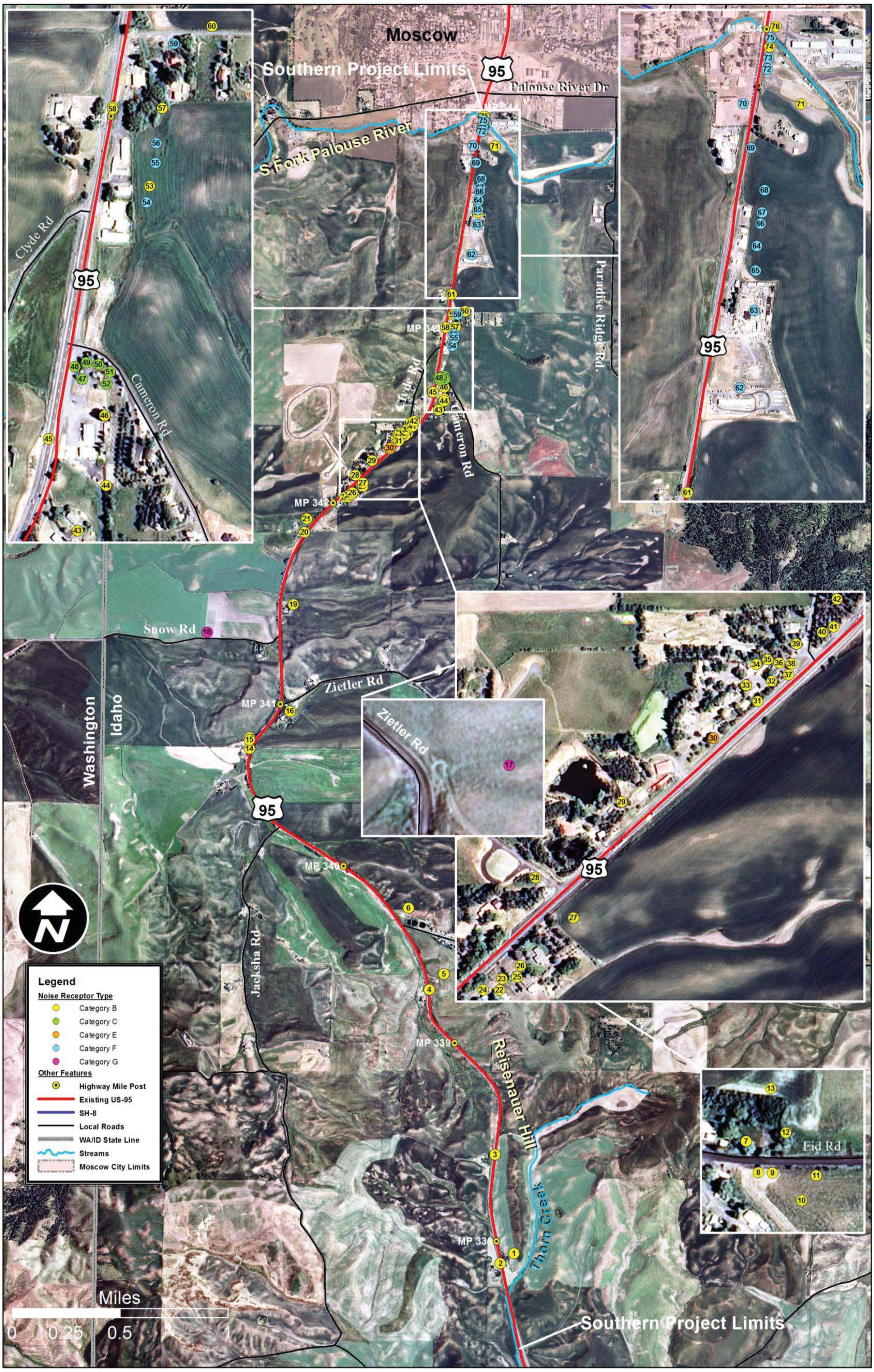
Receptor No.	Receptor Location	NAC Activity Category	Distance to Centerline (feet)	Existing L_{eq} dBA
1	3336 US-95	B	146	59.3
2	3335 US-95	B	227	55.6
3	3379 US-95	B	154	58.9
4	3455 US-95	B	167	57.9
5	3460 US-95	B	235	55.2
6	1010 Eid Rd	B	193	58.9
7	1971 Eid Rd	B	2474	37.2
8	1071 Eid Rd, #5	B	2543	37.3
9	1071 Eid Rd, #7	B	2593	37.2
10	1071 Eid Rd, #9	B	2732	37.1
11	1071 Eid Rd, #8	B	2799	36.9
12	1071 Eid Rd, #2	B	2692	36.9
13	1084 Eid Rd	B	2595	36.8
14	3621 US-95	B	5349	58.2
15	3625 US-95	B	273	55.4
16	1005 Zeitler Rd	B	158	58.4
17	Undeveloped	G	5334	34.5
18	Undeveloped	G	1975	38.9
19	3672 US 95	B	142	60.1
20	3693 US-95	B	114	61.8
21	3125 US-95	B	254	54.5
22	3096 US-95	B	115	61.5
23	3094 US-95	B	90	63.7
24	**3098 US-95**	**B**	**63**	**67.1**
25	3082 US-95	B	127	60.7
26	3080 US-95	B	103	62.5
27	3060 US-95	B	103	62.6

Receptor No.	Receptor Location	NAC Activity Category	Distance to Centerline (feet)	Existing L_{eq} dBA
28	3055 US-95	B	161	58.7
29	3045 US-95	B	151	59.4
30	3015 US-95	E	80	65.8
31	**2979 US-95, #22**	**B**	**71**	**66.7**
32	2979 US-95, #23	B	96	63.7
33	2979 US-95, #20	B	165	59.1
34	2979 US-95, #21	B	208	57.1
35	2979 US-95, #24	B	201	57.3
36	2979 US-95, #26	B	148	60.2
37	**2979 US-95, #25**	**B**	**69**	**67.0**
38	2979 US-95, #03	B	99	63.8
39	2979 US-95, #05	B	151	59.8
40	2979 US-95, #02	B	110	62.8
41	2979 US-95, #01	B	106	63.2
42	2949 Clyde Rd	B	177	58.5
43	2946 US-95	B	129	62.3
44	2936 US-95	B	164	59.6
45	2940 US-95	B	177	59.2
46	**2922 US-95**	**B**	**64**	**67.7**
47	**2921 Cameron Rd***	**C**	**68**	**67.1**
48	**2921 Cameron Rd***	**C**	**68**	**67.2**
49	**2921 Cameron Rd***	**C**	**68**	**67.4**
50	2921 Cameron Rd*	C	171	59.2
51	2921 Cameron Rd*	C	171	59.2
52	2921 Cameron Rd*	C	171	59.0
53	2880 US-95	B	79	65.5
54	2880 US-95	F	79	64.4
55	2860 US-95	F	90	64.4
56	2850 US-95	F	80	65.9
57	2848 US-95	B	80	65.8
58	2845 US-95	B	157	59.8
59	2820 US-95	F	82	65.3
60	2822 US-95	B	145	55.7
61	2805 US-95	B	149	60.4
62	2740 US-95	F	166	59.0
63	2726 US 95	F	179	58.5
64	2720 US 95	F	98	64.0

Receptor No.	Receptor Location	NAC Activity Category	Distance to Centerline (feet)	Existing L_{eq} dBA
65	2710 US 95	F	122	61.6
66	2670 US 95	F	95	64.4
67	2650 US 95	F	89	64.8
68	2650 US 95	F	63	66.1
69	2551 US 95	F	121	62.2
70	2555 US 95	F	268	54.8
71	2500 US 95	B	264	54.5
72	2305 US 95	F	105	63.2
73	2205 US 95	F	110	62.8
74	2205 US 95	B	118	61.4
75	2113 US 95	F	122	59.6
76	2113 US 95	B	126	56.2

Note: Bolded numbers indicate that the noise level approaches or exceeds FHWA NACs.
*Green Acres RV Park stalls (Receptors 47-52) are counted as one business.

Exhibit 22. Noise Receptor Locations



3.13 Air Quality

3.13.1 Regulatory Framework and Policies

Air quality is governed by the following:

- 40 CFR 51-Requirements for Preparation, Adoption, and Submittal of Implementation Plans
- 40 CFR 93-EPA Standards; Control of Hazardous Air Pollutants from Mobile Sources
- 42 USC 7401-Clean Air Act (CAA) of 1970 and amendments of 1990
- ITD Air Quality Policy
- FHWA guidance on Mobile Source Air Toxic (MSAT) Analysis in NEPA documents
- IDAPA 58.01.01-Idaho State Administrative Procedures
- FHWA Policies to Reduce Greenhouse Gas Emissions Associated with Freight Movements
- Technical Advisory (TA) 6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents

CAA amendments of 1990 established air quality goals including those related to land use, travel mode choice, and reduction in vehicle miles traveled. The CAA amendments regulate projects in non-attainment and maintenance of National Ambient Air Quality Standards (NAAQS) requiring conformance with the State Implementation Plan.

Greenhouse gas (GHG), and specifically Carbon dioxide (CO_2) emissions, are not currently regulated at the federal or state level. However, FHWA is working nationally with other modal administrations through the USDOT Center for Climate Change and Environmental Forecasting to develop strategies to reduce the transportation sector's contribution to greenhouse gases, particularly CO_2 emissions, and to assess the risks to transportation systems and services from climate change.

3.13.2 Methodology

MSAT standards establish stringent controls on gasoline, passenger vehicles, and gasoline containment to further reduce emissions of benzene and other MSATs. While MSAT releases to the environment may cause some level of pollution, scientific techniques, tools, and data analysis has not been developed to accurately estimate actual human health or environmental effects from MSATs from this transportation project (ITD 2007b).

In order to evaluate the projected emissions and MSAT effects, a qualitative analysis was performed. Transportation-related emissions can be related to VMT. This qualitative analysis utilizes existing and projected traffic volumes, vehicle mixes and vehicle miles to calculate vehicle miles travelled (VMT). VMTs are used to estimate the changes and relative differences in MSATs for the project alternatives. GHG emissions, including CO_2, are shown to be directly related to energy consumed.

3.13.3 Existing Conditions

The project is not within a federally designated air quality non-attainment or maintenance area for carbon monoxide (CO) and/or particulate matter (PM_{10} or $PM_{2.5}$), nor is it within an IDEQ air quality area of concern. No project level air quality concerns were identified that required evaluation and the project has minimal likelihood of exceeding federal air quality standards. An air quality conformity analysis is not required; however, a qualitative analysis of air quality was conducted. Sensitive receptors in the study area include schools, daycare facilities, hospitals, parks, and retirement facilities.

Greenhouse Gas (GHG)

The transportation sector is the second largest source of total GHGs in the US and is the greatest source of CO_2 emissions, a predominant GHG. In 2004, the transportation sector was responsible for about 31 percent of US CO_2 emissions. The principal human-made source of CO_2 emissions is the combustion of fossil fuels which accounts for approximately 80 percent of human-made emissions of carbon worldwide. Almost all (98 percent) of transportation-sector emissions result from the consumption of petroleum products such as gasoline, diesel fuel, and aviation fuel (FHWA 2011).

Transportation related emissions, including $CO_{2,}$ can be correlated to VMT and fuel consumption which is discussed in Section 3.15, Energy. The VMT for the existing US-95 is 34,008. VMT was based on the length of the alignment (6.34 miles) multiplied by the 2010 traffic volumes. The 2010 data was compiled in 2011.

3.14 Hazardous Materials

3.14.1 Regulatory Framework and Policies

Hazardous materials are governed by the following:

- 40 CFR 1500-1508-CEQ Regulations

- Technical Advisory (TA) 6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents
- 42 USC 103-Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- 42 USC 6901-6992k -Resource Conservation and Recovery Act (RCRA)
- 33 USC Section 1251-Clean Water Act
- 40 CFR 61(M)-National Emission Standards for Hazardous Air Pollutants (NESHAP)
- 29 USC 651-Occupational Safety and Health Act (OSHA)
- 42 USC 300(f)-Safe Drinking Water Act
- 15 USC 2601-2629-Toxic Substances Control Act (TSCA)
- Idaho Statutes Title 39 Health and Safety
- Hazardous Waste Management Act (Chapter 44)
- Hazardous Substance Emergency Response Act (Chapter 71)
- Land Remediation Act
- Idaho Rules\Regulations\Standards (Chapter 72)
- IDAPA 37.03.09-Well Construction Standards Rules
- Rules and Minimum Standards for the Construction and Use of Injection Wells
- IDAPA 37.03.03 Rules and Minimum Standards for the Construction and Use of Injection Wells
- IDAPA 58.01.05-Rules and Standards for Hazardous Waste
- IDAPA 58.01.07-Rules Regulating UST Systems
- IDAPA 58.01.15-Rules Governing the Cleaning of Septic Tanks
- IDAPA 58.01.18-Land Remediation Rules
- IDAPA 58.01.11-Ground Water Quality Rules
- IDAPA 58.01.02-Water Quality Standards
- IDAPA 17.10.01-General Safety and Health Standards
- IDAPA 17.10.01-Idaho General Safety and Health Standards
- Lead-based Paint Poisoning Prevention Act of 1971
- Residential Lead-based Paint Hazard Reduction Act of 1992

3.14.2 Methodology

A technical report titled *Hazardous Material Scan-US-95 Thorncreek Road to Moscow* (Northwind 2005) was prepared to identify hazardous material risks in the study area. Federal and state databases were reviewed again in 2011 to identify any changes to known sites within one half-mile of each alternative that could be affected.

A survey for recorded and potentially hazardous materials was performed in 2005 within approximately one-half mile from the project area. Locations within the project area that potentially contained hazardous material were identified and marked on aerial photographs. Databases were reviewed and public safety personnel were interviewed. In addition, a field review of the study area was completed. The following sources were investigated to complete a hazardous materials scan of the study area:

- National Response Center Public Report Database
- Latah County Solid Waste Department personnel interviews
- DEQ and ITD Lewiston personnel interviews regarding previous spills or releases
- Aerial photography
- Field survey of the corridor
- Idaho State Police Community and Drug Information.
- DEQ underground storage tank (UST) and leaking underground storage tank (LUST) database
- EPA database for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Superfund sites and RCRA sites water dischargers, hazardous waste sites, toxic releases and air emissions sites
- Idaho State Police website for Region 2 was accessed to identify known hazardous materials sites, such as methamphetamine (meth) labs or meth production by-products dump sites
- FINDS, ALLSITES databases

3.14.3 Existing Conditions

The predominant hazardous materials observed during the field survey were small propane tanks and aboveground storage tanks (ASTs) for petroleum products. Two sites were identified that have recorded USTs and two sites appear to have USTs but were not recorded in the databases. A fifth site is listed in the EPA database but was closed in 1988. Table 37. Hazardous Material Sites lists the sites identified within and near the project area. Also see Exhibit 32. Hazardous Material Site Effects.

Table 37. Hazardous Material Sites

Site Name	Address	Database/ Listing	Description
Johnson Trucking	4212 Cameron Rd.	FINDS	USTs and ASTs
Widmans Sports Center	1906 S. Main St.	ID Allsites	300 gallon gas UST. Closed 1988.
Moscow MTCE Yard (B21200)	709 W. Palouse River Dr.	ID Allsites	
Primeland Cooperative/ Latah County Grain Growers	4169 US-95 South	ID UST	5 USTs (diesel & petroleum). Currently in use.
CHS Inc. DBA Primeland Cooperative	2555 US-95 South	ID Tier 2	280,000 pounds diesel fuel.
Private	1451 Thorncreek Rd.	NA	1 200 gallon propane tank.
Thorncreek Ranch	1461 Thorncreek Rd.	Unlisted	Possible UST (Petroleum) Gas pump on property. Old AST (petroleum) located in equipment storage area.
Private	4347 Wolf Rd.	Unlisted	2 200 gallon ASTs (Petroleum).
Clifford Wolf Farms	1010 Wolf Rd. Moscow	Unlisted	1 AST; 3 diesel & 1 gas tank inside barn. (petroleum).
Alan Hoffman	1511 Thorncreek Rd. Moscow	Unlisted	Multiple ASTs associated with farm use. Possible UST (old gas pump observed on property). 1 200 gallon propane tank.
Daniel and Dana Carter	1255 Broenneke Rd.	Unlisted	1 200 gallon propane tank.
Weber Land Company	6782 SR 195, Uniontown, WA	Unlisted	1 AST-across road in farmed field.
Private	Residence on Broenneke Rd	Unlisted	2 ASTs; 1 300 gallon tank. (petroleum and propane).
Joyce Frei Family Trust	Residence on Broenneke Rd	Unlisted	2 ASTs and 1 300 gallon tank (petroleum and propane).
Roy and Catherine Reisenauer	3460 US-95	Unlisted	1 200 gallon propane tank.

Four sites were observed or recorded to contain USTs. Two UST sites were recorded on the DEQ UST list; Primeland Cooperative and Johnson's Trucking. Two other sites appeared to have USTs with visible gas pumps that may still be connected to USTs but were not listed by DEQ. Two of these sites were located on Thorncreek Road on the southern end of the study area. The other site was located on US-95 and probably contains one tank used for diesel fuel.

Other fuel storage containers noted in the study area are described below:

- There was an abandoned 1,000 gallon tank observed along Jacksha Road. It currently holds water from a spring. Four locations in the project area had 55 gallon drums on the property with unknown contents.
- Seventeen properties were observed with ASTs and assumed to contain petroleum products such as gasoline, heating oil, or diesel fuel. The majority of the ASTs were approximately 200 to 500 gallons tanks. Thirty-four homes were observed to have an above-ground propane tank on the property. These ranged in size from 200 gallon to 500 gallon tanks.
- Three sites had numerous abandoned cars. One location on US-95 is currently used as an automotive repair shop. These sites have the potential for the presence of petroleum products, stained soils, and leaky car batteries which could contaminate soils or water. One business within the project area services air conditioners and is anticipated to have Freon and other gases that pose a risk to the environment if not handled correctly. This location also included a stockpile of railroad ties which are typically a source of leaking creosote.
- There were two locations along US-95 within the study area that had methamphetamine lab related incidences (ISP 2005). Methamphetamine labs contain hazardous materials; therefore, it will be necessary to verify what level of cleanup has been completed prior to any construction activities (Denbleyder, pers. com. 2005).
- Latah County has a solid waste transfer station located on SH-8, approximately five miles east of Moscow, outside the study area.

Lead-based paints and a variety of asbestos containing products were commonly utilized in construction between the 1940s and the mid-1970s. Lead-based paint was determined to be a hazardous material in the early 1970s. The vast majority of homes built before 1950 contained substantial amounts of lead-based paint. Due to the age of many of the existing structures there is the potential risk of lead-based paint and asbestos contained in the structures that would be demolished by each alternative.

3.15 Energy

3.15.1 Regulatory Framework and Policies

Energy is governed by the following:

- 40 CFR 1502-Council on Environmental Quality NEPA Regulation

- Technical Advisory (TA) 6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents

3.15.2 Methodology

Energy requirements of a highway include the energy required to construct, operate, and maintain the highway. The operational energy consumption has been estimated using the average energy consumption for different vehicle types and the VMT. VMT is estimated by multiplying the ADT by the length of the highway segment.

Maintenance energy can also be estimated based on the VMT because the amount of roadway that needs to be maintained and the amount of traffic using the roadway relates to the frequency which maintenance would be needed.

3.15.3 Existing Conditions

Operational energy

Table 38. Existing and Projected Fuel Use shows the estimated fuel used for vehicle types travelling on the existing 6.34 mile long highway segment.

Table 38. Existing and Projected Fuel Use

Vehicle type	Average Fuel Consumption (mpg)	Estimated Daily Fuel Use 2010 (gal)	Estimated Daily Fuel Use 2037 (gal)
Passenger Vehicle)	22.2	1,445	2,252
Heavy Truck	5.9	329	687
Total Energy Use		**1,773**	**2,939**

The fuel consumption estimates used in this analysis are based on averages for fuel economy and do not take into account smoothness of traffic flow or average speeds traveled on a specific highway. Highly congested travel conditions with stop-and-start traffic, low speeds, and highly variable speeds all contribute to poor fuel economy (TRB 1995). To help measure the level of congestion or smoothness of traffic flow on a road, LOS standards have been developed. See Exhibit 8. Level of Service (LOS) for a graphic description of LOS.

Total fuel consumption for this segment of US-95 is estimated to be 1,773 gallons per day.

Maintenance energy

The vehicles and equipment used to maintain the highway include trucks, mowers, snow removal machines, tractors, and construction equipment. The frequency at which these vehicles are needed for maintenance activities and the energy needed to produce the material for the road maintenance can be correlated to the VMT for the roadway. VMT would reflect the traffic volumes, the amount of roadway to be maintained and the associated degradation.

4 ENVIRONMENTAL CONSEQUENCES

The primary resource effects from the four alternatives are summarized in Table 39. Summary of Resource Effects. Details are discussed in the respective sections below and in the applicable technical reports.

Table 39. Summary of Resource Effects

Resources	Alternatives			
	No Action	W-4	C-3	E-2
Length (miles)	6.34	6.69	5.94	5.85
Predicted Crash Rate per year	24.8	9.3	10.9	7.7
Approaches	66	36	47	22
Residential Displacements	0	3	7	5
Residences within 300ft of centerline	-	9	12	9
Business Displacements	0	0	8	0
Businesses within 300 ft of centerline	-	7	10	5
Environmental Justice	No disproportionate impact	No disproportionate impact	No disproportionate impact	No disproportionate impact
Right-of-Way new/existing/total (acres)	0	210 / 49 / 259	154 / 55 / 209	207 / 22 / 229
Prime Farmland (acres)	0	46.7	25	50.8
Cultural/Section 4(f) resource Use	0	1	0	0
Air Quality	Attainment Area	Attainment Area	Attainment Area	Attainment Area
Wetlands (acres)	0	5.45	0.99	3.61
Tributaries Number of Crossings/(Linear Feet)	0	9 /5,517	5/7,808	5 /2,592
New Impervious Surface (acres)	0	57	49	55
Floodplains (acres)	0	3.6	1.8	0
Pine Stand (acres)	0	0	0	3.9
Ungulate - (Deer, Elk & Moose) Population and Effects to Habitat Areas (acres)	No Population Effect / 0	No Population Effect / 0	No Population Effect / 0	No Population Effect / 4.4
Palouse remnants within 1 km (3280 ft)	0	12	14	24 including Paradise Ridge
Threatened and Endangered Species Effects	No Effect	Not Likely to Adversely Affect	Not Likely to Adversely Affect	Not Likely to Adversely Affect

Resources	Alternatives			
	No Action	W-4	C-3	E-2
Hazardous Material Sites	0	4	13 (1 Potential Hazardous Site Cleanup)	4
Noise Effects	9	0	1 (the impacted receptor is displaced)	7 (5 of the impacted receptors are displaced)
Visual Quality	No Impact	LOW = 11% MOD = 58% MOD HIGH = 23% HIGH = 8% MH + H = 31%	LOW = 9% MOD = 68% MOD HIGH = 15% HIGH = 8% MH + H = 23%	LOW = 3% MOD = 47% MOD HIGH = 25% HIGH = 25% MH + H = 50%
Construction/Total Cost-(million dollars)	minimal	52/62	43/58	46/55

4.1 Socio-economic and Environmental Justice Effects

4.1.1 Social Effects

Each of the alternative's effects including displacements, right-of-way needs, community cohesion, visual and noise effects were evaluated. Visual quality and noise effects are evaluated in Section 4.11 Visual Quality Effects and 4.12, Noise Effects. Community opinions regarding the effects of each alternative on the community, including noise and visual effects are detailed in the Community Impact Technical Reports. There were strong differing opinions regarding the effects of the W-4 and E-2 alternatives presented during the July 2006 interview period. The Citizens for a Safe Highway 95, claiming to represent people collectively owning 80 percent of the land along E-2, were in favor of E-2 due to the "spectacular view" of the Palouse and of the City of Moscow from US-95 as the route traverses the west base of Paradise Ridge. They believed that the beauty of Paradise Ridge could transform the highway into a gateway for Moscow, and that E-2 could promote and preserve the Palouse landscape to a scenic highway status.

The Paradise Ridge Defense Coalition, which opposed the E-2 Alternative, stated that the majority of the community would like to see the expansion of the roadway follow the existing route as much as possible to minimize the ecological footprint of new roadwork and the view towards US-95 from Paradise Ridge. The argument against E-2 centered on Paradise Ridge as a unique and valued feature in the community. To those opposed to E-2, the ridge should remain untouched because it provides aesthetic value. Paradise Ridge serves as a reason both *for* and *against* the E-2 Alternative (HDR 2005a).

Displacements and Right-of-way

Table 40. Residential Displacements and Right-of-Way shows the numbers of residences displaced and right-of-way needs by alternative.

Table 40. Residential Displacements and Right-of-Way

Alternative	Residential Displacements	Residences 300 ft of Centerline	New Right-of-way (acres)	Existing Right-of-way (acres)	Total Right-of-way (acres)
No Action	0	-	0	0	0
W-4	3	9	210	49	259
C-3	7	12	154	55	209
E-2	5	9	207	22	229

Residential displacements may be due to direct impacts to homes, removal of access, or right-of-way acquisition that would substantially impair the property. Displacements would be compensated under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Relocation Act). The Uniform Relocation Act established minimum standards for federally funded projects that require the acquisition of real property or displace persons from their homes, businesses, or farms.

Some residences that would be within 300 feet of the alternatives' centerline may result in a substantial amount of the property or structures being acquired or otherwise impacted but may not result in a full displacement. Residential displacements and residences with 300 feet of centerline are shown in Table 40. Residential Displacements and Right-of-Way.

No Action Alternative

The No Action Alternative would result in no displacements or right-of-way acquisition.

W-4

W-4 would displace three residences. Two are houses and one is a mobile home. Nine additional residences would be within 300 ft of the centerline. These residences would have some of their land acquired for new right-of-way but access to their properties would be maintained. One of these residences would include the removal of a garage. W-4 would require the greatest amount of right-of-way, but it would have the fewest residential displacements.

C-3

C-3 would displace seven residences. Six are houses and one is mobile home in the Hidden Village Mobile Home Park. Approximately two acres of the mobile home park property would be affected. Twelve residences would be within 300 ft of the centerline of C-3 which is more than the other alternatives.

E-2 (Preferred Alternative)

E-2 would displace five residences; all of which are mobile homes located in the Benson Mobile Home Park. Approximately 2.9 acres of the mobile home park would be acquired. The centerline of the E-2 alternative would also be within 300 ft of nine residences that would have substantial right-of-way acquisition, one of which would remove a garage; however this would not result in a full displacement.

Community Cohesion

Based on an assessment of the important community resources and interviews with community members during the Community Impact Assessment, none of the alternatives would cause a major disruption to community cohesion. See Exhibit 19. Points of Interest.

No community resources would be more difficult to reach or become over utilized. Regardless of the alternative chosen, the origins and destinations of most travelers would remain similar to existing conditions. Some backtracking may be necessary at the northern end of the project to reach businesses on existing US-95; however it would be offset by a reduction in waiting time to enter the highway. All of the Action Alternatives would provide sidewalks and shoulders that would improve community cohesion in the northern end of the project.

4.1.2 Economic Effects

The majority of the businesses located in the study area are in the northern project limits near Moscow. The existing commercial development south of Palouse River Drive is comprised of a mix of construction, transportation, fabrication, and specialty retail establishments (e.g., building supplier, hair salon). These are businesses that do not typically rely heavily on high traffic volumes and drive up customers.

The No Action, W-4 and E-2 alternatives would not displace businesses. Access to and from the businesses would be provided or maintained. However the C-3 Alternative would involve widening the existing roadway which has businesses located along it. C-3 would displace 8 businesses due to impacts to access and would require substantial right-of-way from 10 additional businesses. Visibility and access to some existing businesses could change as a result of the W-4 and E-2 Alternatives in the current US-95 corridor south of Moscow for regional traffic because the W-4 and E-2 Alternatives would realigned. This could adversely affect businesses, particularly the retail businesses that rely, at least in part, on traffic passing through the area. However, if the abandoned section of US-95 is turned over to the North Latah Highway District and used for local circulation, businesses could still be visible. See Table 41. Business Effects.

Table 41. Business Effects

Alternative	Business Displacement	Businesses within 300 feet of centerline
No Action	0	-
W-4	0	7
C-3	8	10
E-2	0	5

The indirect effects of the alternatives on businesses are discussed in Chapter 6, Indirect and Cumulative Effects.

The majority of the right-of-way required for each of the alternatives is agricultural land. The effects to farmland production are summarized in Section 4.3, Farmland Effects. The Uniform Relocation Act also provides compensation and equitable treatment for acquisition of agricultural land.

4.1.3 Environmental Justice Effects

Minority Populations

While there are minorities in the study area there are no distinguishable minority populations. Therefore, none of the alternatives would result in a disproportionately high or adverse effect to minority populations.

Low-Income Populations

There are three mobile home parks identified within the study area that may provide a source of low-cost housing; the Hidden Village Mobile Home Park, the Benson Mobile Home Park and the Woodland Heights Mobile Home Court. See Environmental Justice Technical Report (HDR 2005b) for details of the analysis.

No Action Alternative

The No Action Alternative would not adversely affect the mobile home parks through displacement or right-of-way acquisition; however as traffic increases by the 2037 design year, the safety and capacity issues would intensify and community safety and traffic noise would increase. See Section 4.12 Noise Effects.

W-4

W-4 would avoid all of the mobile home parks. One mobile home would be affected but it is not located within a mobile home park. It would benefit all park residents by improving the safety of US-95 and highway access issues. Construction of additional travel lanes would improve the roadway's LOS, reduce commute times and facilitate more efficient access to services. Ingress and egress of vehicles, including emergency response units, would have reduced response times and would be enhanced by the use of a turn bay. Based on the above discussion, W-4 would not cause disproportionately high and adverse effects to any low-income populations as per EO 12898.

C-3

C-3 would closely follow existing US-95 near the Hidden Village and Benson Mobile Home parks. It would displace two mobile homes located in the Hidden Village Mobile Home Park. Two acres of right-of-way would be required from the Hidden Village Mobile Home Park. C-3 would improve the safety of US-95 and improve the highway access for all users but to a lesser extent compared to the E-2 and W-4 alternatives. C-3 would not cause disproportionately high and adverse effects to any low-income populations per EO 12898.

E-2 (Preferred Alternative)

E-2 would result in the greatest number of displacements in the mobile home parks. It would affect the eastern edge of Benson Park, displacing five mobile homes. The mobile homes are configured linearly from east to west along Eid Road. The E-2 Alternative was aligned to the far east of the mobile home parks to minimize harm and maintain community cohesion for the remaining residences.

E-2 would require acquisition of 2.9 acres of the Benson Mobile Home Park. It would include constructing a bridge structure over Eid Road which would result in a substantial increase in noise effects to seven receptors; however five receptors would be displaced. The bridge structure and new elevated roadway would cause high visual effects. See Section 4.11 Visual Effects and Section 4.12, Noise Effects for additional detail.

E-2 would benefit park residents by improving the safety of US-95 and improving highway access and mobility. Construction of additional travel lanes would improve the roadway's level of service, reducing commute times and facilitating more efficient access to services. Ingress and egress of vehicles, including emergency response units, would be enhanced by the use of a turn bay. Hidden Village and Benson Park residents would still be able to access existing US-95 approximately one mile south of Eid Road.

Shifting the E-2 Alignment further west to minimize displacements in the Benson Mobile Home Park was evaluated in the E-1 Alternative but would result in different displacements and other resource effects. It would also adversely affect the community cohesion for the remaining residents. The E-1 Alternative that was evaluated early in the screening process was aligned across Eid Road and between Hidden Village and Benson Mobile Home parks formally differentiating the development into the two respective parks. This alignment would more directly affect Hidden Village, requiring the relocation of three residences and was not desirable to the business owner. E-1 was eliminated because it would displace four total residences and one business. One of the displacements was a NRHP listed historic site and a Section 4(f) resource. It would also have higher effects to two rare plant communities and wetlands. See Chapter 2, Alternatives for additional detail.

Based on interviews with the mobile home park owner and residents in 2004 and 2011, the residents of the mobile home parks do not have major concerns should it be necessary to relocate. A property management company representative with several rentals in the area stated that there are other opportunities available for displaced residents to find equitable living accommodations. All relocations will be completed in accordance with the Uniform Relocation Act which will ensure fair and equitable treatment and relocation into safe and secure housing.

Based on the above discussion, the details in the Environmental Justice Technical Report and its supplemental report, the E-2 Alternative would adversely affect the residents living in the

Benson Mobile Home Park, which is a source of low-cost housing; however, the residents are not considered a low-income population. The E-2 Alternative would improve the safety and capacity of US-95 for all users including residents of the mobile home park. In addition, with the standards of the Uniform Relocation Act, the willingness of the residents to relocate and the availability of replacement sites, the effects to the mobile home park are not considered to be disproportionately high and adverse as defined by EO 12898 (HDR 2005a).

4.2 Land Use and Recreation Effects

The alternatives would have differing effects to existing and proposed land uses. However, all Action Alternatives would be consistent with county land use plans and regulations. The county would enforce the current zoning and land use designations regardless of which alternative is chosen.

All of the Action Alternatives would involve coordination with the City of Moscow, Latah County and university officials to identify scenic turnout locations and potential signage for the University of Idaho and Paradise Ridge. All of the Action Alternatives would also include lane striping to accommodate bicycles and pedestrians along the roadway.

No Action Alternative

The No Action Alternative would not require property acquisition and there would be no changes to land use. However, the No Action would not address safety and capacity issues in the corridor. Accesses onto the highway would not be limited and would continue to grow. Therefore, the No Action would be inconsistent with the Latah County and City of Moscow Comprehensive Plans.

W-4

W-4 would be inconsistent with the City of Moscow's goals for constructing the planned Ring Road project. A western alternate route would respond to the higher development trends west of Moscow and would be closer to the universities in Moscow and Pullman. However, W-4 would bisect the proposed ball fields and could spur development in that area, diverting resources which would be in conflict with the City of Moscow's plans for the ball field, school and residential development.

W-4 would convert more highly productive farmland to other uses, which is inconsistent with Latah County's primary land use goal of preserving productive farmland. To promote an efficient and safe transportation system, the Latah County Comprehensive Plan requires that limits be placed on the number of access points to the highway and encourages bicycle, pedestrian, and mass-transit options. All alternatives would maintain access to Paradise Ridge and other recreational resources. However, the accesses to different resources on existing US-95 would differ.

C-3

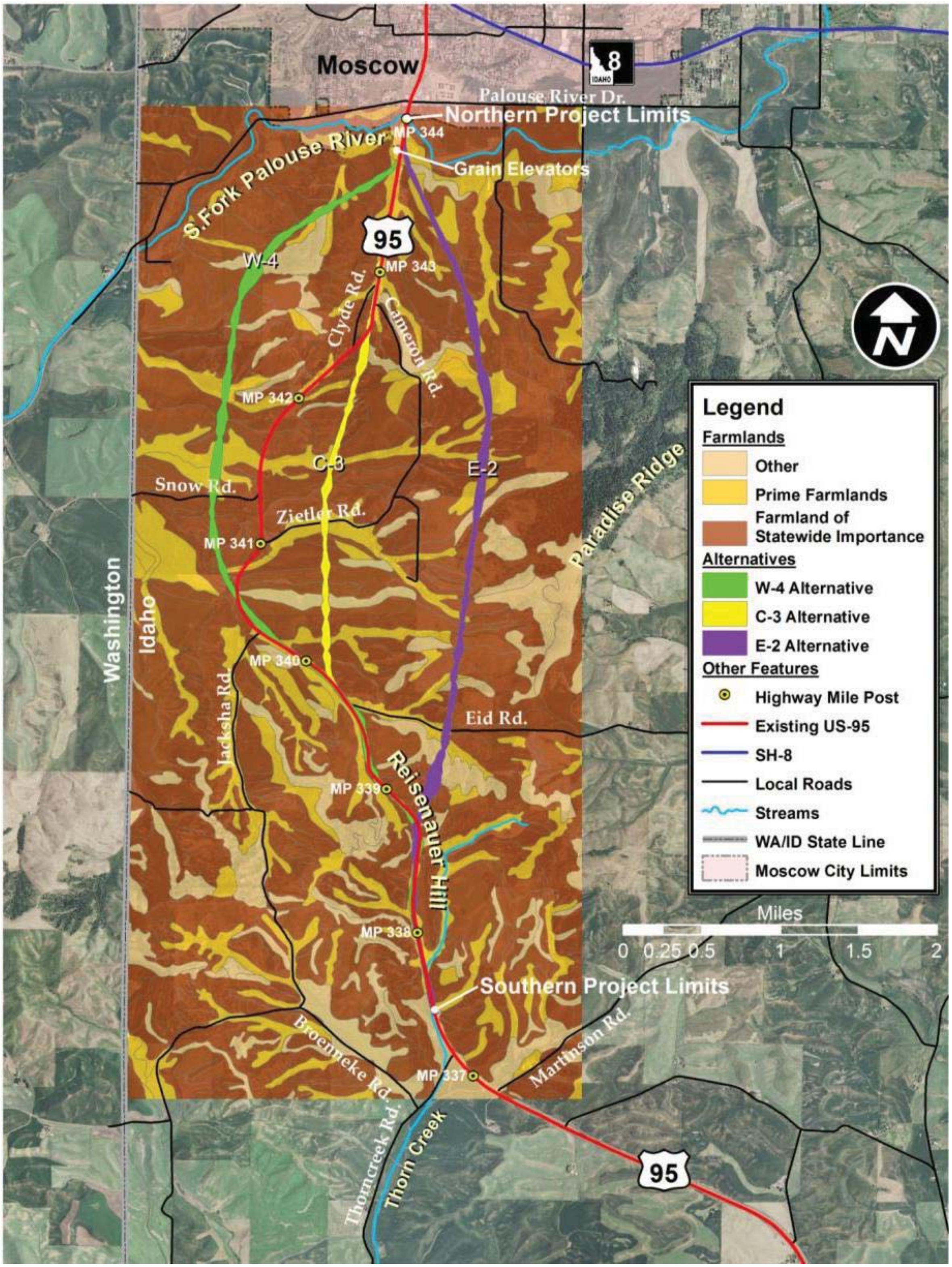
C-3 is viewed by the City of Moscow as the most consistent with land use goals because the areas along the existing US-95 are already established. C-3 could spur growth and increase property values along its alignment; however, it would be to a lesser degree than W-4. C-3 would present challenges for connectivity to the planned Ring Road Project.

E-2 (Preferred Alternative)

E-2 would affect the same types of land use categories as the other alternatives; but would affect more CRP land than other alternatives. E-2 would present challenges for future connectivity to the planned Ring Road Project. However, the project is conceptual and currently unfunded. The County considers an eastern route as the preferred alternative to a western route. E-2 could also increase property values and have growth along its alignment; however it would be less growth than W-4 and would have controlled access. E-2 would be consistent with the City of Moscow goals for development and would not affect the proposed ball fields and planned development west of US-95.

4.3 Farmlands Effects

Exhibit 23. Farmland Effects



All of the Action Alternatives would affect both prime farmlands and farmlands of statewide importance. See Exhibit 23. Farmland Effects and Table 42. Farmland Effects for the acreage effects to farmland classifications as a result of each alternative.

Table 42. Farmland Effects

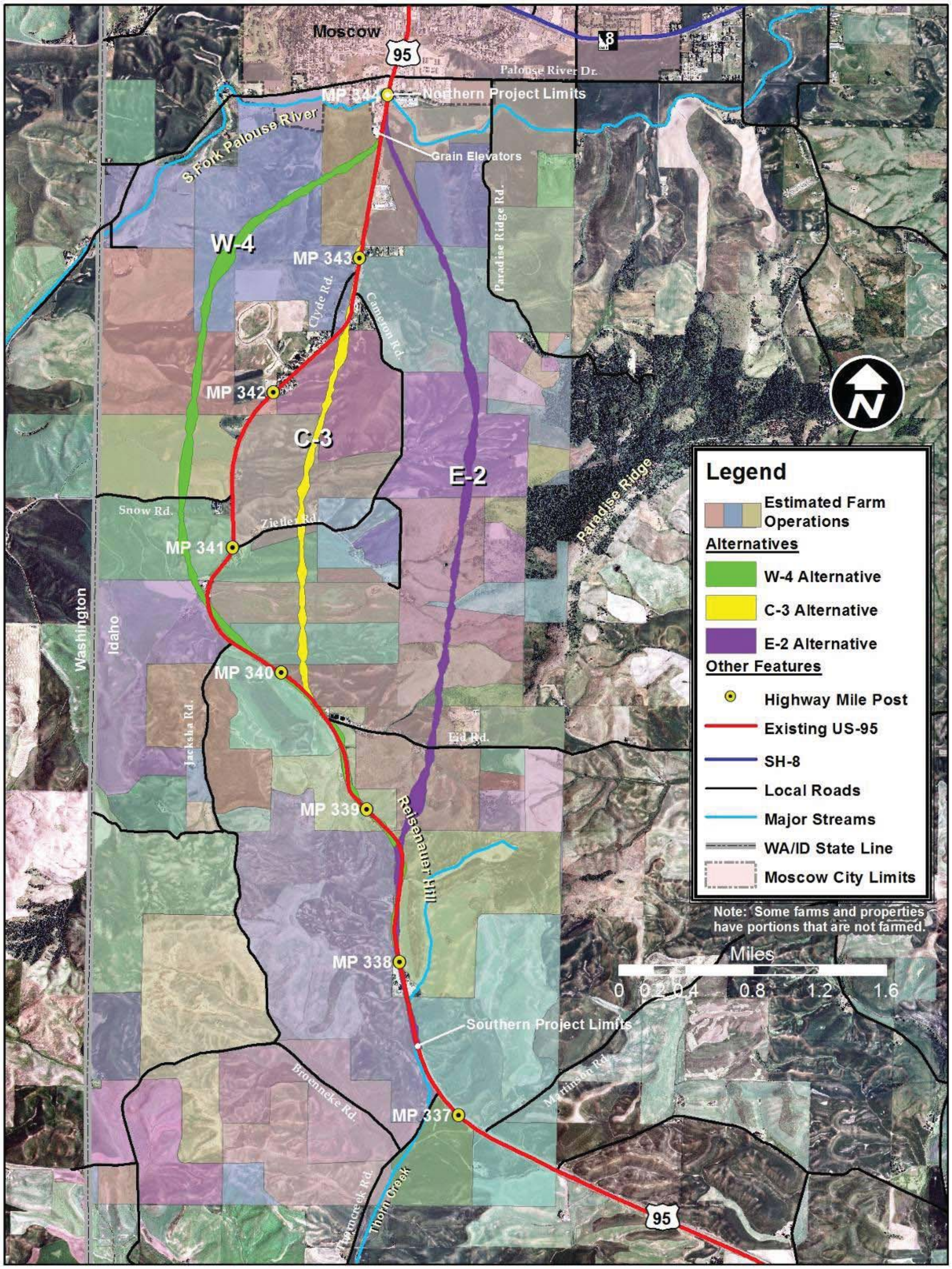
Alternatives	Farmland Conversion (acres) *	Prime Farmland (acres)	Farmland of Statewide Importance (acres)	CRP Land (acres)	Other** (acres)	Segmented Farms (number of farms)	Farmland Conversion Impact Rating (points)
No Action	0	0	0	0	0	0	N/A-
W-4	159.0	46.7	105.3	9	7.0	4	189
C-3	101.7	25.1	69.7	9	6.9	4	188
E-2	158.2	50.8	94.8	43.5	12.6	4	190

* This acreage excludes the existing road right-of-ways
**Other=unclassified farmland

NRCS staff completed USDA Farmland Conversion Impact Rating Forms for the three Action Alternative corridors. All of the Action Alternatives were determined to have a Farmland Conversion Impact Rating of greater than 160 points, which is the threshold for requiring additional measures for protection from conversion of farmland to other uses. See Section 3.3.2 and the Farmland Technical Report for details regarding how the score was determined.

The most direct effects to farms would be the loss of farm production to transportation use for the area within each alternative's right-of-way. See Table 42. Farmland Effects. Direct effects would also include erosion and sedimentation from cut and fills. Construction of a highway alignment through farmland could result in farm segmentation. It could change access to fields and require farm equipment to cross the highway in order to access the segmented farms. It could also split farming operation into smaller, less economically feasible operations. Effects to farm operations are shown in Exhibit 24. Farm Operation Effects.

Exhibit 24. Farm Operation Effects



Measures that would minimize the conversion of farmland to other uses include controlling non agricultural access points along US-95 and working with farmers to construct farmable slopes. See Chapter 9, Environmental Commitments under Farmland. See Chapter 6, Indirect and Cumulative Effects for the descriptions of effects from farm segmentation and effects to farm service operations.

No Action

This alternative would involve only minor safety and maintenance of the existing roadway and would not result in farmland conversion, segmentation or right-of-way acquisition. As congestion increases on the roadway, access to fields and farm related transport may become more difficult.

W-4

The W-4 Alternative would affect the greatest number of acres of statewide important farmland and the greatest number of acres of farmed land. The average farming operation in the W-4 corridor is 882 acres. Approximately 5.6 percent of this assessment unit is CRP land. W-4 would cross 11 farms, splitting four farming operations; however, this would not result in any farming operations less than 20 acres.

C-3

The C-3 Corridor has the fewest acres of prime and statewide important farmland. Approximately 8.8 percent of the land in this assessment unit is in CRP and planted with grasses. The C-3 Alternative would convert the least acres of prime farmland and farmland of statewide importance to other uses. The average farming operation in the C-3 corridor is 699 acres. C-3 would cross 13 farming operations and would split four farms. This would create two farming operations under 20 acres. The C-3 Alternative would utilize more existing right-of-way and would convert the least amount of farmland to other uses.

E-2 (Preferred Alternative)

E-2 would affect slightly more prime farmland than the other Action Alternatives. 27.7 percent of the land in the assessment unit is CRP land, primarily in the southern end of the corridor. However, the E-2 Alternative would affect the greatest acres of actively farmed land even after the CRP land is subtracted. E-2 would affect approximately twice as much CRP land compared to the other alternatives.

The average farm size along the E-2 Alternative is 636 acres. E-2 would cross nine farming operations and would split four farms. This would result in four farming operations less than 20 acres.

4.4 Cultural Resource Effects

While there are three sites that are eligible for the National Register of Historic Places (NRHP) within the APE, only one, the Deesten/Davis Farmstead, would be adversely affected by any of the alternatives. The No Action, C-3 and E-2 alternatives would have no effect to cultural resources.

W-4 would adversely affect the Deesten/Davis Farmstead because the alignment would encroach on 1.83 acres of the historic site and would remove trees which were planted by the Civilian Conservation Corp in the 1930s. Removing the trees could affect the farmstead setting. These effects would also constitute a Section 4(f) use. See Chapter 5, Section 4(f) Evaluation.

4.5 Floodplain Effects

Exhibit 25. Floodplain Effects displays the location of each alternative in relation to the 100-year floodplain. None of the alternatives would be located in the regulatory floodway which is associated with the South Fork Palouse River. All Action Alternatives would be constructed with the roadbed greater than three feet above the level of a 100-year flood event. This will allow for a one foot rise to the 100 year floodplain. Table 43. Floodplain Effects lists the type and amount of effects to floodplains for each alternative. See the Floodplain Technical Report for more information.

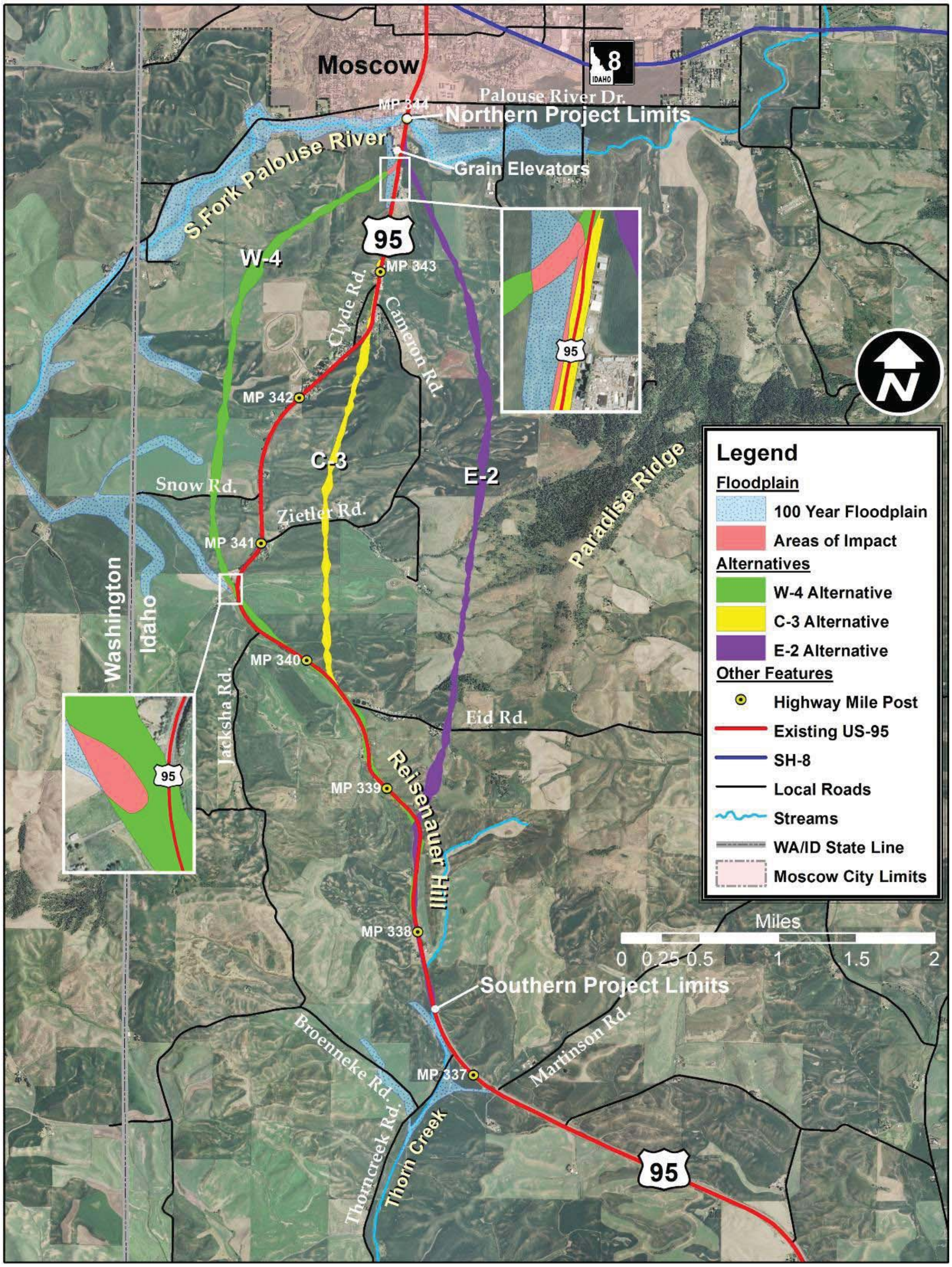
Table 43. Floodplain Effects

Alternative	100-year Floodplain Effects (acres)	Description of Effects (traverse or longitudinal)
No Action	0	None
W-4	3.6	Transverse and Longitudinal
C-3	1.8	Longitudinal
E-2	0	None

No Action

The No Action Alternative would not affect floodways or 100-year floodplains as no new roadway would be constructed.

Exhibit 25. Floodplain Effects



W-4

W-4 would encroach upon 100-year floodplain in two areas; near the South Fork Palouse River and near Jacksha Road. Both areas are highly modified floodplains on agricultural land with degraded floodplain functions. They are associated with the headwaters of the South Fork Palouse River.

The site near Jacksha Road would result in a longitudinal encroachment on two acres of 100-year floodplain. This site is considered to be a low risk because of the low cost of the property and the fact that there are no buildings in the vicinity (ITD 2012b). Effects to the natural and beneficial values of the floodplain would be minimal since the area is currently used for grazing.

Along the South Fork of the Palouse River, W-4 would result in a transverse encroachment of 1.6 acres. The roadway would be designed to hydraulically pass the 25-year storm event. This could potentially impair the hydraulic flow and floodplain functions on the east side of the roadway fill potentially resulting in an increase of flood elevations. Effects to this floodplain would involve a slightly higher risk than the floodplain near Jacksha Road as there are a few buildings located within the area. These risks could be minimized through the use of an oversized pipe, or pipes to accommodate flood backwater. Effects to the natural and beneficial values of the floodplain would be minimal since the area is currently used as farmland. The affected beneficial values of the floodplain are further described in Section 4.6, Wetland and Tributary Effects and in the Wetland Delineation Technical Report.

C-3

C-3 would encroach upon one 100-year floodplain on the north end of the project in a headwater associated with the South Fork Palouse River. It would be a longitudinal encroachment of 1.8 acres, on agricultural land resulting from roadway widening. There are a few buildings in the vicinity of the floodplain; however, it would still be considered a low risk to buildings or other structures (ITD 2012b). Effects to the natural and beneficial values of the floodplain would be minimal since the area is currently used as farmland. The beneficial floodplain values that would be affected are discussed in Section 4.6, Wetland and Tributary Effects.

E-2 (Preferred Alternative)

E-2 would not encroach upon any 100-year floodplain and would be a practicable alternative to avoid floodplain effects.

While W-4 and C-3 would encroach upon floodplains, all roadways for any of the alternatives would be designed to pass the 25-year storm event. The roadway would be designed to be three feet higher than the flood elevation to allow for a one foot rise in elevation. Therefore, the effects would be minimized per the requirements of EO 11988 and 23 CFR 650, Subpart A.

Measures to minimize floodplain effects have been incorporated into the project as have measures to restore and preserve the natural and beneficial floodplain values. E-2 would be the most practicable alternative under EO 11988 since it would not encroach on floodplains and would pose the least risk to the human and natural environment.

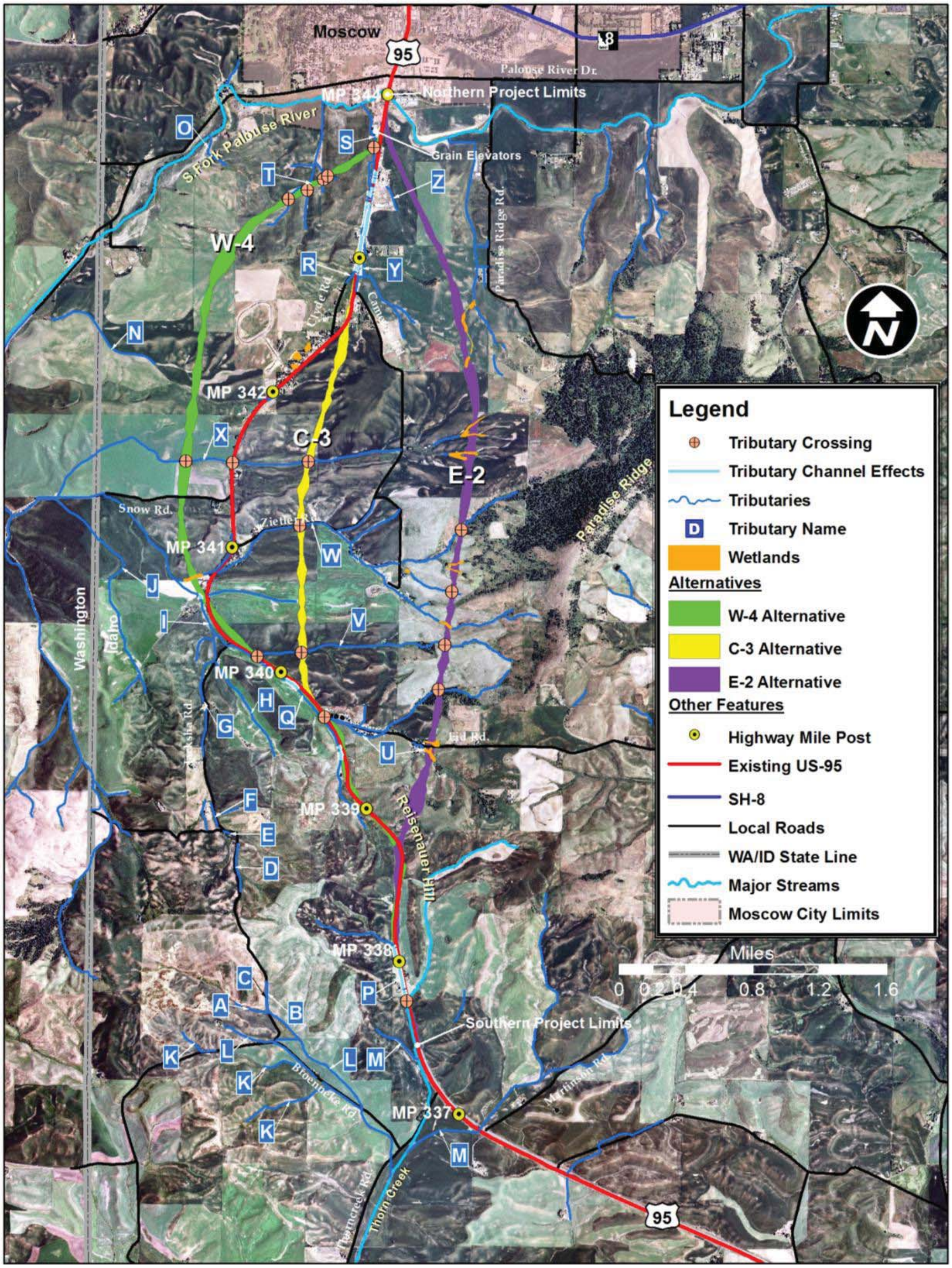
4.6 Wetland and Tributary Effects

4.6.1 Tributary Effects

All of the alternatives, including the No Action Alternative, could contribute transportation related pollutants to tributaries. Accumulated pollutants from operation and maintenance would build up on impervious surfaces such as the roadway then run off during rain events. The runoff may contain; gasoline, oil, hydraulic fluids, litter, dust, salt, sand, de-icing chemicals such as magnesium chloride, and tire and brake particulates such as zinc, copper, lead and other heavy metals. Stormwater could also contribute to increased erosion and sedimentation, increased peak flows, habitat alteration, and increased stream temperature. Stormwater is not commonly a source of bacterial pollutants or nutrients; therefore the alternatives should not contribute to increased bacteria or nutrient levels.

The degradation of water quality, effects to riparian habitat and soil disturbance could adversely affect the fish and other aquatic species that utilize the streams. Vegetation removal can increase stream temperatures and can lower the dissolved oxygen levels. Increased peak flows can increase erosion and sedimentation affecting spawning beds and fish migration. See Exhibit 26. Tributary Effects.

Exhibit 26. Tributary Effects



No Action

The No Action Alternative would not result in additional tributary crossings, new impervious surfaces, channel alteration, culvert removal, vegetation removal or other associated effects. However, the lack of formal stormwater collection and treatment along existing US-95 would continue to contribute to the degradation of water quality and could adversely affect fish and other aquatic species. There would continue to be temporary water quality effects due to maintenance activities.

Action Alternatives

The potential effects to tributaries common to all Action Alternatives include:

- Increased numbers of tributary crossings and lengthening of culverts
- Increased runoff due to new impervious surfaces such as roadways, parking lots or sidewalks.
- Increased erosion and sedimentation due to general construction activities near tributaries (i.e., road fill or culvert installation)
- Vegetation removal near tributary crossings and encroachments
- Utility relocations near waterways
- Placement of fill near waterways
- Improved hydraulic conveyance through culverts under reconstructed roadways

All Action Alternatives would involve construction of temporary and permanent BMPs to ensure compliance with the CGP, TMDLs and other regulatory requirements. All of the Action Alternatives would be designed to pass a 25-year storm event.

Increasing the area of impervious surface and removing vegetation has the potential to increase water temperatures and lower dissolved oxygen levels, which could affect aquatic species. The numbers of tributary crossings, channel effects and new impervious surface area for each alternative are shown in Table 44. Tributary Effects.

Table 44. Tributary Effects

Alternatives	Crossings (number)	Channel Effects (linear feet)	New Impervious Surface (acres)
No Action	0	0	0
W-4	9	5,517	57
C-3	5	7,808	49
E-2	5	2,592	55

W-4

W-4 would have the greatest number of tributary crossings and the greatest amount of new impervious surface which could result in increased scour, channelization, erosion and sedimentation, and vegetation disturbance. W-4 would result in greater water quality degradation compared to C-3 and E-2. There may also be a corresponding effect to the aquatic species that occur in the streams. See Section 4.8, Vegetation, Fish and Wildlife Effects.

C-3

C-3 would have the same number of tributary crossings as E-2 but would affect approximately three times more linear feet of tributary channel than E-2 primarily due to the encroachment of the roadway on the sides of stream channels. It would have the fewest acres of new impervious surface because it would follow existing US-95 for much of the alignment.

E-2 (Preferred Alternative)

E-2 would have the same number of tributary crossings as C-3 but would affect approximately one third of the length of tributary channel. Therefore, E-2 would result in less removal of riparian vegetation and less erosion and sedimentation due to channel realignments and scour. This would result in fewer effects to aquatic species and water quality in the tributaries. E-2 would affect some wetland areas that are the headwaters to the downhill tributaries or included within wetlands but are not individually classified as tributaries. The E-2 Alternative would increase the acres of impervious surface near the headwaters and tributaries which would result in increased stormwater discharge. This could result in increased scour, erosion, sedimentation and pollutant discharge into the receiving waters.

Avoidance, Minimization and Mitigation

All of the Action Alternatives would include impacts to tributaries. Culverts would be aligned to follow the natural channel of the stream or creek whenever possible. The E-2 Alternative would avoid effects to the greatest extent. Once all practicable measures for avoidance and minimization are in place, remaining impacts will be mitigated through a compensatory mitigation plan which will include replacing the affected flows and functions of the tributaries.

4.6.2 Wetland Effects

The FHWA requires consideration of all wetlands regardless of whether they are jurisdictional by the USACE. The wetland effects of each alternative are shown in Table 45. Wetland Effects. Only the wetlands affected by any of the alternatives are described in this section. See the Wetland Delineation Technical Report for information regarding all the wetlands.

No Action

The No Action Alternative would not directly affect wetlands.

Action Alternatives

The Action Alternatives would affect from 0.99 acres to 5.45 acres of 17 different wetlands. See Table 45. Wetland Effects and Exhibit 27. Wetland Effects. The majority of the wetlands in the project area are rated as Category III. These are typically small wetlands that have been disturbed and have low vegetative diversity compared to Category I and II wetlands. Most of the wetlands that are affected drain into either the South Fork of the Palouse River or Thorn Creek, both of which are on the 303(d) list and are waters of the US.

Table 45. Wetland Effects

	Alternative W-4 (acres)		Alternative C-3 (acres)		Alternative E-2 (acres)	
Wetland	PEM	PSS	PEM	PSS	PEM	PSS
W9	1.59					
W10	2.20					
W13						0.19
W20	0.36					
W23	0.31		0.30		0.20	
W24	0.15		0.16			
W25			0.02			
W26			0.23			
W27	0.78					
W28	0.04		0.04		0.04	
W29					1.32	
W31	0.02					
W32						0.73
W35					0.75	
W39			0.24			

Wetland	Alternative W-4 (acres)		Alternative C-3 (acres)		Alternative E-2 (acres)	
	PEM	PSS	PEM	PSS	PEM	PSS
W40					0.25	
W44					0.13	
	5.45	**0.00**	**0.99**	**0.00**	**2.69**	**0.92**
Totals	**5.45**		**0.99**		**3.61**	

PEM=Palustrine Emergent
PSS=Palustrine Scrub-shrub

W-4

The majority of the wetlands affected by the W-4 Alternative drain to the South Fork of the Palouse River. The remainder drain into Thorn Creek. Wetlands help to improve water quality of these two water bodies which are both listed on the 303(d) list. Filling wetlands could potentially cause an increase in the amount of pollutants and sediments that reach these waters.

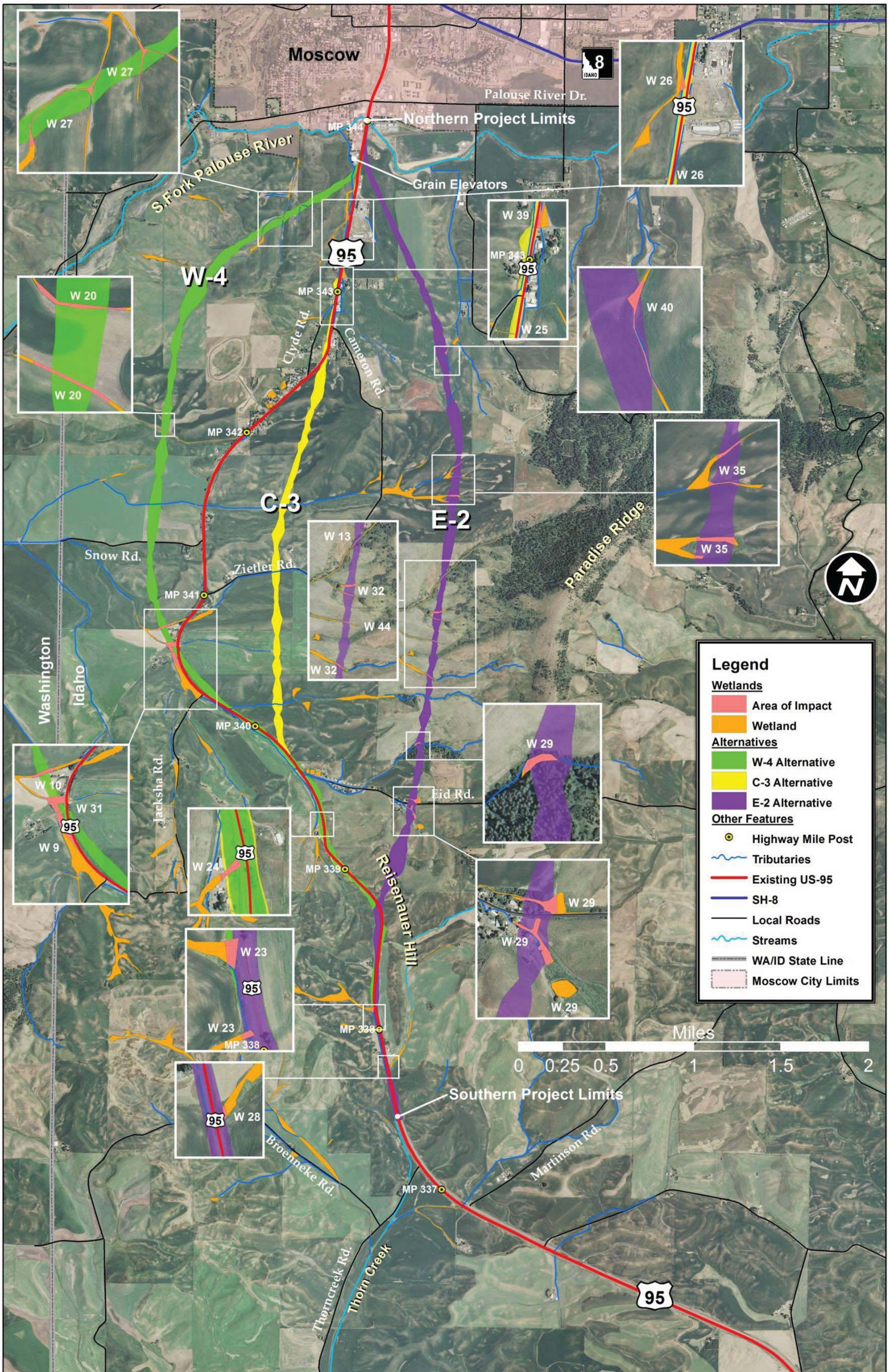
This alternative would affect PEM wetlands. All of the affected wetlands have been modified and are surrounded by active farming. W-4 would affect 5.43 acres of Category III wetlands and 0.02 acres of a Category IV wetland. 5.12 acres of affected wetlands scored 50 percent or higher for improving water quality. Wetland 28, of which 0.04 is affected, scored 50 percent for wildlife habitat. Wetland 23 and Wetland 31 did not score over 50 percent in any of the three categories for wetland functions (Gilmore 2006).

Most of the wetland effects are the result of the new alignment crossing wetlands. Wetland 23 would have 0.31 acres of fill from widening and straightening the road on its existing alignment. W-4 would affect the greatest acreage of wetlands.

C-3

The C-3 Alternative would have the least effects to wetlands out of the Action Alternatives. All six of the wetlands affected are Category III PEM wetlands and are either farmed or surrounded by farmland. Four of the affected wetlands (0.67 acres) scored a 50 percent or higher rating for improving water quality. There would be 0.04 acres of effects to Wetland 28 that scored 50 percent for wildlife habitat.

Exhibit 27. Wetland Effects



The wetlands affected by the C-3 Alternative are located near the existing highway and currently receive pollutants from road runoff. Four of the affected wetlands drain to the South Fork of the Palouse River. The remainder drains to Thorn Creek. The wetland effects would result from widening US-95 along its current alignment.

E-2 (Preferred Alternative)

Most of the wetlands affected by this alternative are Category III PEM wetlands. The remainder of the effects are to PSS wetlands surrounded by farming activities. Approximately half of the wetlands affected by E-2 are associated with man-made ponds. Five of the affected wetlands (3.03 acres of impact) scored 50 percent or higher for improving water quality functions. Only one of the affected wetlands (0.04 acres of impact) scored a 50 percent or higher for improving habitat functions.

Two of the wetlands affected drain to Thorn Creek and five drain to the South Fork of the Palouse River. One does not appear to have surface connection to other wetlands or tributaries. Most of the effects would be due to new sections of alignment. These wetlands are already disturbed and many of them have been altered or artificially created through the addition of ponds.

The C-3 and W-4 alternatives would have a greater effect to wetlands functioning high for improving water quality while the E-2 Alternative would affect more wetlands that are functioning higher for habitat. The C-3 Alternative would have the least effect to wetlands in terms of acreage, function and value.

Avoidance, Minimization and Mitigation

404(b)(1) Guidelines require all appropriate and practicable steps be taken to minimize adverse effects to the aquatic ecosystem, including compensatory mitigation. Wetland impacts that cannot be avoided or minimized further will be mitigated through a compensatory mitigation process. For the Action Alternatives there will be between 0.99 and 5.45 acres of unavoidable wetland impacts. During preliminary and final design, permitting will be completed in accordance with Section 404 of the CWA. Mitigation will be implemented according to 33 CFR 325 and 332 and will replace any lost functions and values.

Effects to wetlands and tributaries will be minimized by providing adequate temporary and permanent stormwater BMPs to comply with the CGP and TMDLs. Culverts will be placed under the roadway to allow continued hydrological connectivity under the roadway. FHWA requires replacement of lost functions and values for all wetland effects, including effects to wetlands non-jurisdictional by the USACE. Mitigation for wetland effects from any of the Action Alternatives is outlined in Chapter 9, Environmental Commitments.

Based upon the above considerations, it is determined that there is no practicable alternative that avoids all construction in wetlands and tributaries and that the proposed action includes all practicable measures to minimize harm to wetlands and tributaries which may result from such use.

Mitigation will be implemented in accordance with 33 CFR 332 Compensatory Mitigation for Losses of Aquatic Resources. A watershed approach will be used to identify mitigation sites for affected wetlands and tributaries. Potential sites in the subbasin will be evaluated as suitable mitigation to replace the affected functions and values. Compensatory mitigation can be carried out through four methods: the restoration of a previously-existing wetland or other aquatic site, the enhancement of an existing aquatic site's functions, the establishment (i.e., creation) of a new aquatic site, or the preservation of an existing aquatic site.

Within the project vicinity the Cow Creek Mitigation Site has already been constructed to compensate for effects from other projects. However, there may be remaining credit that could be applied to a portion of the required mitigation for this project. This will be determined during preliminary design should an Action Alternative be selected.

4.7 Groundwater Effects

Potential transportation related effects to groundwater could include:

- Increased impervious surface areas (such as roadways, parking lots or sidewalks)
- Hazardous material spills from the travelling public or construction equipment
- Accidental spills during utility relocation
- Discharge of untreated stormwater into underground injection wells
- Contamination during well decommissioning

The project is located over the Wanapam and Grand Ronde aquifers which are overlain by rich loess soils with high water holding capacity. The potential effects of the alternatives to groundwater due to hazardous material sites and hazardous material handling is discussed in Section 4.14 Hazardous Materials Effects.

The No Action Alternative would continue to use existing US-95 which has no formal stormwater treatment areas. It would not increase impervious surface but untreated stormwater would continue to flow to tributaries and groundwater.

All Action Alternatives would increase impervious surfaces that could contain highway related pollutants that could drain to groundwater. See Section 4.6.1, Tributary Effects for a description of transportation related effects. All Action Alternatives would be designed and constructed to comply with the CGP and TMDLs. A SWPPP will be prepared and implemented that will identify temporary and permanent BMPs such as grassy swales or check-dams. With the implementation of these BMPs, there would be a low risk of aquifer contamination from stormwater. Increased impervious surfaces over aquifers can lead to slower recharge rates.

4.7.1 Affected Wells

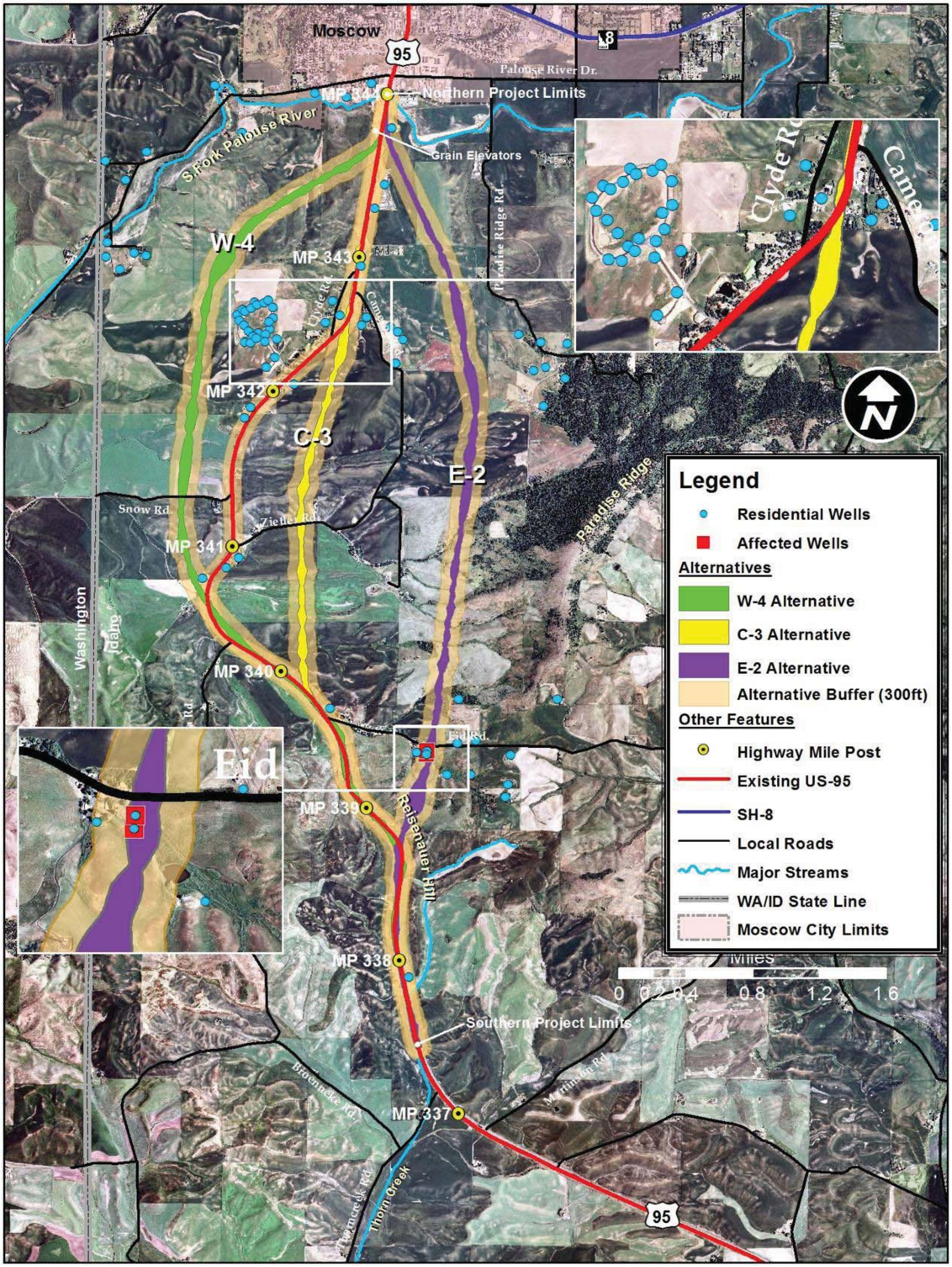
There are numerous domestic and irrigation wells within the project area.

The No Action Alternative would not require right-of-way acquisition or construction; therefore, it would not affect wells within the project area. The E-2 Alternative is the only alternative that would affect wells, all of which are domestic. See Exhibit 28. Affected Wells. Table 46. Affected Wells shows the number of known or registered wells that would be affected by each alternative. See Chapter 9, Environmental Commitments.

Table 46. Affected Wells

Alternatives	Affected Domestic Wells	Domestic Wells within 300 ft
No Action	0	10
W-4	0	4
C-3	0	6
E-2	2	5

Exhibit 28. Affected Wells



Well relocations may cause a short term interruption of water service during construction. Drinking water may be temporarily affected by suspended sediments caused by well drilling activity.

4.8 Vegetation, Fish and Wildlife Effects

4.8.1 General Wildlife Species Effects

To assess the relative effects of the alternatives to all vegetation, fish and wildlife species would be difficult. IDFG prepared an assessment of project effects to general wildlife species. They identified species that were determined to be representative of Species of Greatest Conservation Need (SGCN). For each of the representative species, project effects were based on occurrence of the species in the project area and the presence of suitable habitat in the area. If the species was not known to occur in the project area and no suitable habitat was present for the species, then it was determined the alternatives would not affect the species. However, if suitable habitat for the species was present, regardless of whether there were known or recorded occurrences, the project was assumed to affect the species (IDFG 2006). IDFG also assumed that all new right-of-way required by each alternative was suitable habitat for those species affected; therefore, the relative difference in right-of-way required for each alternative relates to the relative effects to the species. Based on this method, except for the pygmy nuthatch, long eared myotis, northern alligator lizard, and ungulates, the W-4 Alternative would have the greatest effects to general wildlife and the C-3 Alternative would have the least effect. See Table 47. Representative Wildlife Species Effects,

All of the Action Alternatives would pass through similar agricultural or rural residential lands which constitute low to marginal quality general wildlife habitat. The Action Alternatives also transect habitat types that support a greater diversity of vegetation, fish and wildlife species including wetlands, riparian areas, pine stands, Palouse remnants and areas with water sources. A pine stand that provides potential habitat for long-eared myotis and pygmy nuthatch would be affected by the E-2 Alternative. See Table 48. Habitat Type Effects.

Table 48. Habitat Type Effects

Alternative	Agricultural/ Grassland (acres)	Pine Stands (acres)	Ungulate Habitat (acres)	New Right-of-Way (acres)
No Action	0	0	0	0
W-4	159	0	0	210
C-3	101	0	0	154
E-2	158	3.9	4.4	207

Riparian and wetland habitat effects are discussed in detail in Section 4.6, Wetland and Tributary Effects.

Exhibit 29. Habitat Feature Effects. See the Wildlife Technical Reports for additional detail.

Table 47. Representative Wildlife Species Effects

Species	Potential Species Effect
Woodhouse's toad	No Impact
Mountain quail	No Impact
Peregrine falcon	No Impact
Yellow-billed cuckoo	No Impact
Townsend's big-eared bat	No Impact
Nimapuna tigersnail	No Impact
Pale jumping-slug	No Impact
Fir pinwheel	No Impact
Salmon coil	No Impact
Lyre mantleslug	No Impact
Dry land forest snail	No Impact
Oregonian (2 species)	No Impact
Humped coin	No Impact
Palouse giant earthworm	No Impact
Northern alligator lizard	Potential Impact (E-2)
Ring-necked snake	Potential Impact
Swainson's hawk	Potential Impact
Long-billed curlew	Potential Impact
Short-eared owl	Potential Impact
Grasshopper sparrow	Potential Impact
Pygmy nuthatch	Potential Impact (E-2)
Long eared myotis	Potential Impact (E-2)
California myotis	Potential Impact
Stonefly (5 species)	Potential Impact
Mayfly (2 species)	Potential Impact
Spur-throated grasshopper (2 species)	Potential Impact

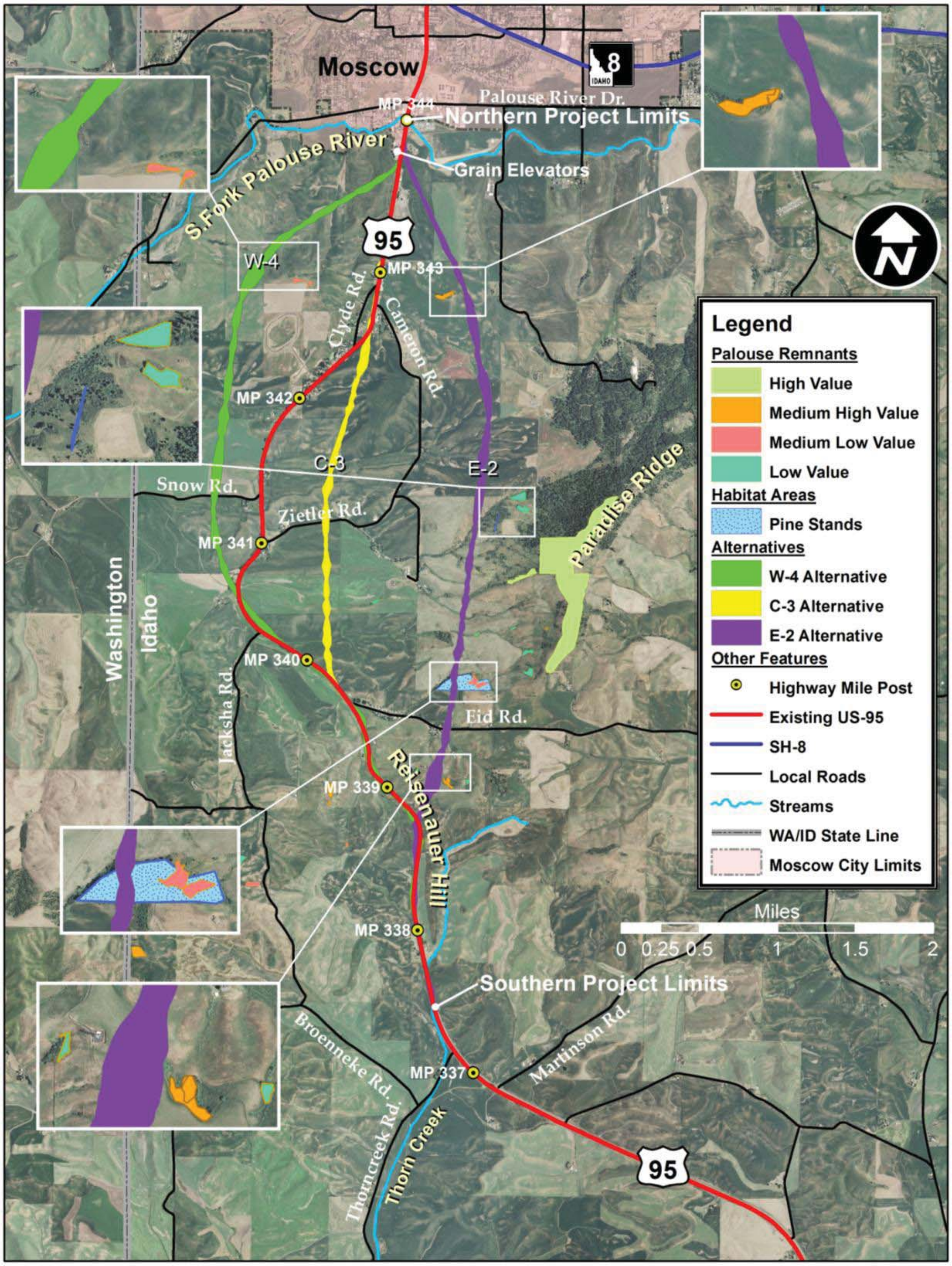
All of the Action Alternatives would pass through similar agricultural or rural residential lands which constitute low to marginal quality general wildlife habitat. The Action Alternatives also transect habitat types that support a greater diversity of vegetation, fish and wildlife species including wetlands, riparian areas, pine stands, Palouse remnants and areas with water sources. A pine stand that provides potential habitat for long-eared myotis and pygmy nuthatch would be affected by the E-2 Alternative. See Table 48. Habitat Type Effects.

Table 48. Habitat Type Effects

Alternative	Agricultural/ Grassland (acres)	Pine Stands (acres)	Ungulate Habitat (acres)	New Right-of-Way (acres)
No Action	0	0	0	0
W-4	159	0	0	210
C-3	101	0	0	154
E-2	158	3.9	4.4	207

Riparian and wetland habitat effects are discussed in detail in Section 4.6, Wetland and Tributary Effects.

Exhibit 29. Habitat Feature Effects



All of the Action Alternatives would add two additional travel lanes and would have a wider typical section. The straighter alignment and wider roadway would improve the ability of the driver to spot wildlife crossing the roadway and would improve the ability of the driver to avoid and recover from potential wildlife collisions.

No Action

The No Action Alternative would have no direct effect to vegetation and general wildlife habitat. Wildlife collisions would continue to climb with increased traffic volumes.

W-4

W-4 would run primarily through agricultural land that functions as foraging and breeding habitat for many wildlife species. W-4 would cross nine tributaries that provide habitat for resident wildlife species.

C-3

The C-3 alternative would pass through some agricultural areas but would utilize much of the existing US-95 roadway. Wildlife in this corridor is already accustomed to traffic. C-3 would result in the fewest acres of conversion of farmland that currently functions as foraging and breeding habitat for many wildlife species. The C-3 Alternative would cross five tributaries that possess habitat for resident wildlife species.

E-2 (Preferred Alternative)

The E-2 Alternative would pass through agricultural lands, primarily plowed fields and CRP lands located west of Paradise Ridge. It would not disturb the forested habitat on Paradise Ridge but is closer to Paradise Ridge than the other alternatives. The E-2 Alternative would convert the greatest amount of farmland that functions as foraging and breeding habitat for many general wildlife species. The E-2 Alternative would affect a forested area that could provide suitable habitat for representative wildlife species including the northern alligator lizard, pygmy nuthatch and long-eared myotis (see Pine Stands below). The E-2 alternative would cross fewer tributaries compared to the W-4 Alternatives however, the tributaries that are affected possess greater habitat value for resident wildlife species than tributaries that are affected by either the W-4 or C-3 alternatives.

4.8.2 Palouse Remnant Effects

The No Action Alternative would not involve road realignment, major soil disturbing activities or removal of existing vegetation and therefore would not directly affect the Palouse remnants.

The W-4, C-3 and E-2 alternatives would not directly affect Palouse remnants. See Chapter 9, Environmental Commitments for mitigation measures. Indirect effects are discussed in Chapter 6, Indirect and Cumulative Effects.

4.8.3 Palouse Restoration Projects Effects

The No Action, W-4 and C-3 alternatives would not affect Planned and Existing Restoration Projects. The E-2 Alternative would directly affect a property with an *easement* for restoration activities under the USFWS Partners Program. However, the section of the property that would be affected is an actively producing wheat field and any on-going or planned restoration activities are approximately 200 feet from the alignment. Those activities include ecological weed control (hand-pulling weeds) and planting Spalding's catchfly. While the E-2 Alternative would not directly affect the areas where restoration activities are occurring or are planned; it would bring the roadway closer to the projects compared to the other alternatives. See Exhibit 30. Planned and Current Restoration . Indirect and cumulative effects to Palouse Restoration Projects are described in Chapter 6. Indirect and Cumulative Effects.

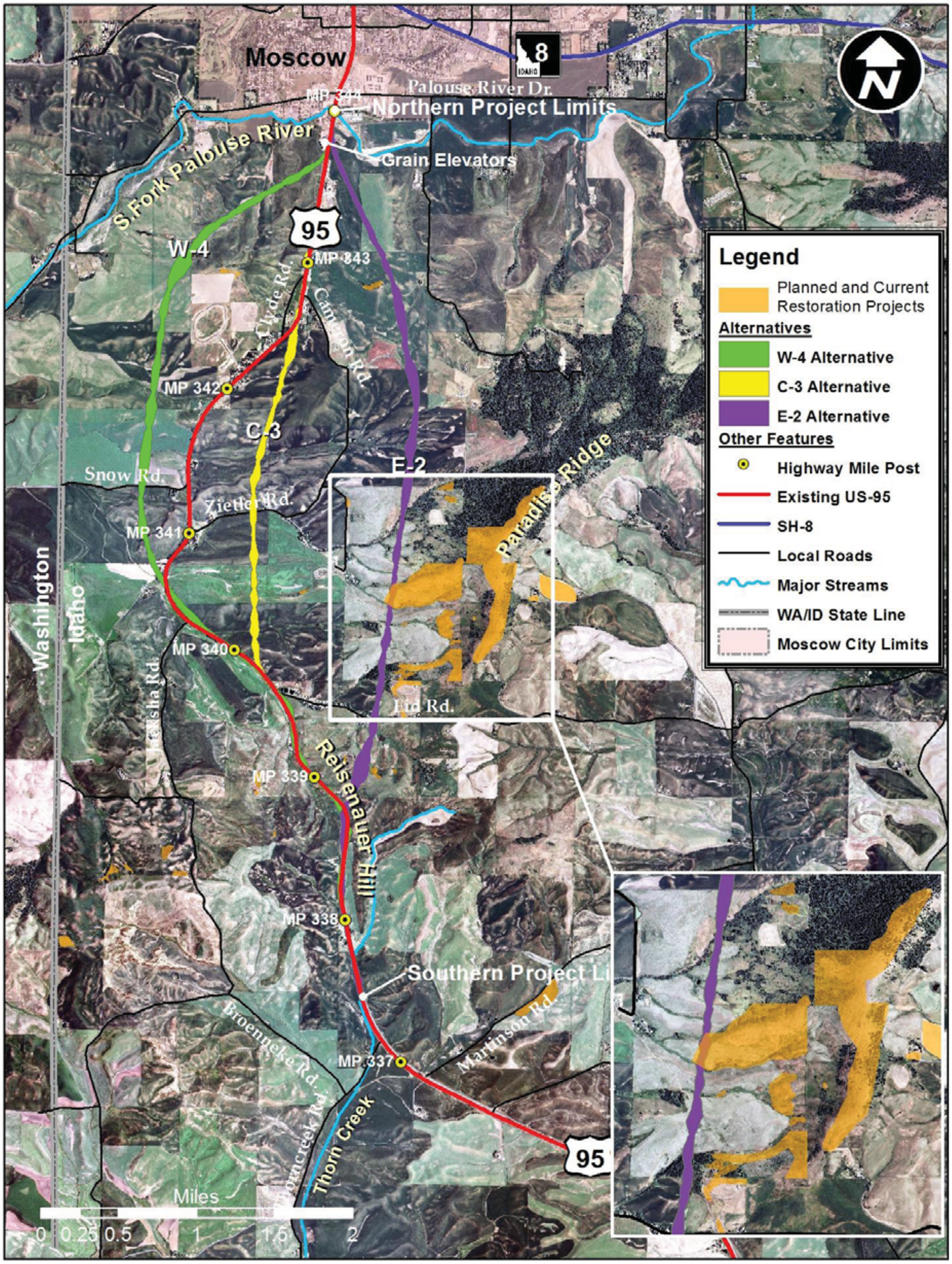
4.8.4 Rare Plant Effects

None of the alternatives would directly affect any known occurrences or populations of rare plants. Indirect and cumulative effects are discussed in Chapter 6. Indirect and Cumulative Effects.

4.8.5 Pine Stand Effects

The No Action, W-4 and C-3 alternatives would not affect pine stands that could provide potential nesting habitat for pygmy nuthatch, long-eared myotis, northern alligator lizard or other species.

Exhibit 30. Planned and Current Restoration Projects



The E-2 Alternative would affect 3.9 acres of a ponderosa pine stand that could offer potential nesting habitat for the long-eared myotis and pygmy nuthatch, and habitat for the northern alligator lizard. However, this pine stand is small with ten snags and only four mature pine trees suitable for pygmy nuthatch nesting habitat. The pygmy nuthatch is protected under the Migratory Bird Treaty Act and no active nest sites can be destroyed or removed. Tree removal would occur outside of the nesting season to avoid impacts to nesting birds. The loss of this habitat is considered minor and there is an abundance of suitable habitat nearby at Paradise Ridge.

4.8.6 Riparian Habitat Effects

All of the Action Alternatives would cross tributaries; however, crossings would be designed to allow for hydraulic flow to continue under the roadway. Crossings may include, bottomless box culverts, culverts placed at-grade or use of stream simulation designs. Where practicable, provisions for terrestrial species movement would be incorporated into the crossing design. See Chapter 9, Environmental Commitments. W-4 would affect the greatest length of tributaries, whereas the E-2 alternative would affect the least. See Section 4.6, Wetland and Tributary Effects for additional detail.

4.8.7 Ungulate Effects

A study titled *Assessment of Potential Big Game Impacts and Mitigation Associated with Highway Alternatives from Thorncreek Road to Moscow* (Sawyer 2010) evaluated the ungulate studies prepared for the project. The study summarized the conclusions regarding quality of ungulate habitat in the project area the potential effects of the alternatives to those habitats. It also made recommendations regarding mitigation. See Table 49. Ungulate Habitat Effects. The studies concluded that none of the Action Alternatives would bisect important ungulate habitat or known migration corridors and that population-level effects from highway construction were unlikely.

Table 49. Ungulate Habitat Effects

	Ungulate Habitat Quality*		
Alternative	Moose	Elk	White-tail deer
No Action	None	None	None
W-4	Poor	Poor	Marginal
C-3	Poor	Poor	Marginal
E-2	Marginal	Marginal	Moderate

Source: (Sawyer 2010)

*Ungulate habitat on scale of increasing value is: none, poor, marginal, moderate and high.

Ungulates utilize and move to all types of habitat but frequently utilize areas with shelter and cover, riparian areas, and areas with water sources. Ungulates have been sighted and utilize habitat in the project area; however, only poor to moderate quality ungulate habitat is present. The primary ungulate habitat affected by all three alternatives is plowed and cultivated fields, much of which is presently enrolled in the Conservation Reserve Program (CRP). See Section 4.10 Transportation and the Safety Technical Report for wildlife collision data factors.

No Action

The No Action Alternative would not directly affect ungulate habitat. It could however, result in more wildlife collisions due to an increase in projected traffic volumes on US-95 by the 2037 design year. The substandard curves, steep grades and narrow typical section would not be improved making it difficult to spot and avoid wildlife. The projected increase in traffic and the density of traffic flow could result in greater numbers of wildlife collisions on this segment of US-95. The No Action Alternative would not meet the project purpose and need.

For the Action Alternatives, realigning a highway to an area where no road currently exists would change the general setting of the area and may displace some wildlife less accustomed to human disturbance such as elk and moose. Noise and increased human presence could temporarily displace ungulates in the area during construction. The Action Alternatives could result in effects to poor, marginal, moderate or high quality habitat. See the Wildlife Technical Reports for additional detail regarding the degrees of effects and the differing quality of the affected habitat.

A straighter roadway alignment, additional lanes and a wider typical section would improve the visibility of wildlife crossing the roadway and would improve the ability of the driver to avoid and recover from potential wildlife collisions.

W-4

W-4 would pass through primarily agricultural land without suitable cover near foraging areas. Therefore, it is considered poor habitat for elk and moose. This alternative would also pass through marginal white-tail deer habitat.

C-3

C-3 would pass through poor habitat for elk and moose. It would pass through marginal white-tail deer habitat. C-3 would not correct the curves and grade to the extent of E-2 or W-4. Therefore, it may be more difficult to spot wildlife and recover from potential wildlife collisions in some locations of C-3 compared to the other Action Alternatives.

E-2 (Preferred Alternative)

E-2 would pass through marginal habitat for elk and moose located in the southern half of the study area, primarily on CRP land and farmed fields. Moderate white-tail deer habitat would also be affected. E-2 would be aligned between an existing man-made farm pond that may be used by wildlife, and Paradise Ridge. E-2 could affect the movement of moose and elk that currently travel between the pond and Paradise Ridge.

Elk tend to stay closer to security and escape cover than deer. A pine stand located in the southern half of the project may be used for cover by ungulates as they forage in the nearby agricultural fields. The E-2 alternative would affect 3.9 acres of the pine stand as well as agricultural land that is used for foraging which would affect elk. A total of 4.4 acres of areas suitable ungulate habitat would be affected by the E-2 Alternative. The E-2 Alternative posed the largest concern for ungulates due to its proximity to small patches of native habitats not yet converted to agriculture (i.e., pine stands and Palouse remnants) (Sawyer 2010). More suitable habitat for ungulates is available in the surrounding areas east of Paradise Ridge and in the gullies further west in Washington State (Ruediger 2007). Regionally and statewide, the area is considered to have low wildlife populations and low to moderate quality habitat. See Table 49. Ungulate Habitat Effects for a summary of the alternatives' effects to ungulates. See the Wildlife Technical Reports for additional detail.

In the summer of 2012 ITD and IDFG began developing a Memorandum of Understanding (MOU) outlining mitigation measures for vegetation, fish and wildlife effects. See Chapter 9. Environmental Commitments.

4.9 Threatened and Endangered Species Effects

This section summarizes the effects of the alternatives on federally listed threatened and endangered species and critical habitat. A discussion of federal candidate and proposed species is included in 3.8, Vegetation, Fish and Wildlife and 4.8, Vegetation, Fish and Wildlife Effects.

No Action. The No Action Alternative would not involve right-of-way acquisitions, major construction or a large amount of soil disturbance; therefore, it would have no effect to threatened or endangered species and designated critical habitat. The higher projected traffic volumes and the density of traffic flow could result in greater numbers of wildlife collisions on this segment of US-95.

W-4, C-3 and E-2 (Preferred Alternative). The Action Alternatives would result in no effect to Canada lynx, water howellia, steelhead trout and its designated critical habitat. W-4, C-3 and E-2 may affect but are not likely to adversely affect Spalding's catchfly due to indirect effects. See Table 50. Threatened and Endangered Species Effects and 6.1 Indirect Effects. See the Biological Assessment Technical Report (ITD 2007a) for details.

Table 50. Threatened and Endangered Species Effects

Common Name	*Scientific Name*	Federal Status	Action Alternatives' Effects Determination
Canada lynx	*Lynx Canadensis*	Listed Threatened	No Effect
Spalding's catchfly	*Silene spaldingii*	Listed Threatened	Not Likely to Adversely Affect (NLAA)
Water howellia	*Howellia Aquatilis*	Listed Threatened	No Effect
Steelhead trout	*Oncorhynchus mykiss*	Listed Threatened	No Effect
Steelhead trout Critical Habitat	*Oncorhynchus mykiss*	Designated Critical Habitat	No Effect

Canada Lynx

The Action Area is located on agricultural land less than 3,000 feet in elevation and is located greater than 20 miles from the nearest potential Lynx Analysis Unit (LAU) (i.e., the Umatilla or Saint Joseph National Forests). Haul roads, staging areas, waste sites, material sources and stockpile sites would not be located within an LAU. The project would have no effect on Canada lynx.

Spalding's catchfly

A population of Spalding's Catchfly was discovered within the project area between Alternatives W-4 and C-3 near Clyde Hill; however, no plants are in the footprint of the alternatives. All of the alternatives have Palouse remnants that occur within a mile of the proposed alignment which could be indirectly affected. This resulted in a determination that all of the Action Alternatives may affect but are not likely to adversely affect Spalding's

Catchfly as a result of indirect effects. See Chapter 6, Indirect and Cumulative Effects. See the Biological Assessment Technical Report for additional details.

Water howellia

Water howellia occurs in seasonal ponds, often associated with potholes. The only potentially suitable habitat for water howellia in the action area would be the floodplain of the South Fork Palouse River. However, a field survey revealed that the floodplain is under cultivation, channelized and dominated by reed canarygrass, a non-native invasive weed. Therefore the site is not suitable for water howellia. The project would have no effect to water howellia.

Steelhead Trout and Designated Critical Habitat

No steelhead trout or designated or proposed critical habitat for steelhead trout is within the action area. Therefore, this project would have no effect to steelhead trout or their designated critical habitat.

4.10 Transportation Effects

4.10.1 Public Safety

A safety analysis was completed using the First Edition of the AASHTO Highway Safety Manual. The results show that all three Action Alternatives will be safer than the existing alignment and the No Action Alternative. The results also show that the E-2 Alternative would be the safest proposed alignment for total crashes, as well as total injury related crashes and fatalities. Table 51. Projected Crash Rates for 2017 shows the fatalities, injury and total crashes by 2017 for each alternative. See the Safety Technical Report for additional information.

Table 51. Projected Crash Rates for 2017

Alternative	Fatal and Injury Crashes per year	Crashes per year
No Action	10.5	24.8
W-4	4.5	9.3
C-3	4.7	10.9
E-2	3.8	7.7

All of the Action Alternatives would be designed to meet AASHTO standards. The No Action Alternative would still not meet AASHTO standards.

The two typical sections presented in Exhibit 2. Typical Section: Four-Lane Divided Highway and Exhibit 3. Typical Section: Four-lane Highway with Center Turn Lane and Curb, Gutter and Sidewalk are common to all Action Alternatives. See Section 2.4.2. Design Elements and Typical Section for All Action Alternatives.

The four-lane divided highway sections would have lower predicted crash rates than the four-lane highway with center turn lane, curb, gutter and sidewalk. The center turn lane would allow for two-way left turns which have a higher predicted numbers of crashes than the highway section with the 34-foot median. The speed limit in the four-lane section with center turn lane, curb, gutter and sidewalk would be reduced to 45 mph for each Action Alternative which would mitigate some of the safety factors associated with turning movements.

Table 52. Length of Typical Sections, compares the lengths of the two different typical sections by alternative. The four-lane with center turn lane would have a higher crash rate and lower LOS (LOS B) compared to the four-lane divided highway section which would have a LOS A.

Table 52. Length of Typical Sections

Alternative	Length of Four-lane Divided (miles)	Length of Four-lane with center turn lane, curb, gutter and sidewalk (miles)	Total Length of Alignment (miles)
No Action	0	0	6.34
W-4	6.39	0.30	6.69
C-3	4.52	1.42	5.94
E-2	5.61	0.24	5.85

Weather Conditions

As a result of public concern expressed during the public involvement process, a report titled *Final Report for Weather Analysis of Proposed Realignments of US Highway 95 Thorncreek Road to Moscow* (Qualls 2005) was prepared. The study concluded that while there may be minor variations in climatic conditions in the three corridors evaluated, they were unpredictable and not considered substantial. Unpredicted weather occurrences are included in the historical base crash rate data obtained from the safety evaluation manual and are also included as safety factors in the safety analyses. See Weather Technical Report.

Wildlife-related Safety

The frequency of wild animal crashes in the project area is much less than many other sections of US-95 and many other highways in Idaho (Ruediger 2007). In addition, wildlife crashes are not typically severe. Based on the low frequency, randomness and low severity for drivers due to wildlife crashes, they are not considered to be a major contributor to the crash rates. The improvements to the roadway curvature and grade as well as the wider typical section, would improve the ability for drivers to spot wildlife and maneuver if wildlife enter the roadway (Couch 2010).

4.10.2 Highway Capacity

This segment of US-95 currently has an ADT of 5,364 and operates at a Level of Service (LOS) C. It would reach an average of 8,524 ADTs by 2037 and would operate at a LOS D, which has restricted movements and delays during peaks.

All of the Action Alternatives would add a travel lane in each direction, widen shoulders, clear zones and upgrade the roadway to meet the ITD Design Manual and AASHTO standards. All the Action Alternatives are projected to have a LOS A in the rural area and a LOS B in the urban areas just south of Moscow by the 2037 design year.

Access and Mobility Effects

Access control on the State Highway System is based on the type of facility, its functional classification, highway safety, vehicle operations, preservation of highway utilities, zoning, and route consistency. The functional classification would determine the type of access control type applied to the highway.

With the Action Alternatives US-95 would be a multi-lane principal arterial with a rural functional class. US-95 would be a Type IV limited access control facility with fewer accesses onto US-95 compared to existing conditions. Existing approaches would be allowed to remain at locations where construction of joint access is not economically justified. See Table 53. Access Types for the types and numbers of access points per alternative.

Table 53. Access Types

Alternative	Field	Residential	County Road	Commercial	Total Access Points
No Action	14	28	7	17	66
W-4	17	10	4	5	36
C-3	11	14	5	17	47
E-2	9	6	2	5	22

The alternatives would have differing effects to access and mobility due to alignments locations.

The No Action Alternative would maintain the existing accesses and would have the highest number of access points of all the alternatives. It would not meet the ITD Design Manual, AASHTO Standards, or ITD's Spacing Policy. The No Action Alternative would have the highest number of traffic conflicts which would contribute to it having the highest crash rate of all the alternatives.

The Action Alternatives would reduce the crash rates primarily by reducing the numbers of accesses onto US-95 and by designing to meet the ITD Design Manual and AASHTO standards. Access points present opportunities for traffic conflicts and contribute to crash rates.

All Action Alternatives would have overpass structures that would reduce the number of access points onto the new highway. All Action Alternatives would shorten the projected travel times through this section of US-95 compared to the No Action Alternative; however, E-2 would result in the greatest travel time reduction. Shortened travel times could improve the economic vitality of the area and could benefit freight transport, emergency service response, school access, bicyclists/pedestrians, and mail delivery. See Table 54. Overpass Structures and Total Travel Times.

Table 54. Overpass Structures and Total Travel Times

Alignment	Overpass Locations	Total Travel Time by 2037 (minutes:seconds)
No Action	None	6:36
W4	Snow Road	6:17
C3	Zeitler Road	6:02
E2	Eid Road	5:30

Community concerns included loss of access and visibility for businesses along the existing highway and conflicts between traffic and expanded medical facilities. See the Community Impact Technical Reports.

4.10.3 Bicyclists and Pedestrians

Currently the roadway has substandard shoulders and is not striped for bicycles and pedestrian use. All Action Alternatives would improve safety and access for bicyclists and pedestrians by constructing wider shoulders and improving sight distance. The four-lane highway with center turn lane, curb, gutter and sidewalk sections would provide sidewalks that would be designed to meet the Americans with Disabilities Act (ADA) requirements. The C-3 Alternative would have the greatest length of the four-lane with center turn lane, curb, gutter and sidewalks.

4.10.4 Emergency Response Time

No need was identified for additional emergency service facilities as a result of construction of any of the alternatives. The ability for emergency service providers to turn around within the project limits to access the on-coming lanes is critical. All of the alternatives would improve the ability to patrol the highway (HDR 2006).

The C-3 Alternative would provide the most convenient access and best emergency response times to the population on the existing US-95, while the E-2 and W-4 alternatives would provide improved access and quicker response times to some of the more outlying areas and cities. The C-3 Alternative would have a longer four-lane with center turn lane section that would allow for easier access and more frequent opportunities to turn around in the urban areas. The E-2 Alternative would have the greatest improvement on mobility (10 percent) (Arnzen pers. comm. 2012). The segments of existing US-95 that may be turned over to the North Latah Highway District would be utilized for local circulation and emergency service access.

No Action

The No Action Alternative would have the highest crash rates of the alternatives. It would include maintenance and minor safety improvements along existing US-95; however, it would not correct the substandard curves and grades, reduce access points or widen shoulders or clear zones. The roadway would still not meet the current AASHTO standards. As ADT's between Thorncreek and Moscow grow and the two-lane highway approaches its capacity, passing opportunities will decrease and crashes on US-95 are expected to increase. Travel times and access for freight, emergency services, postal delivery, schools, and commuting would be longer than current conditions. The No Action Alternative would worsen safety for all users and would not meet the project purpose and need.

W-4

W-4 would be the longest alignment of the alternatives with four proposed public road intersections; Eid Road, Jacksha Road, North Old US-95 and South Old US-95. Overall it is predicted to reduce fatal and injury crashes by more than half of the No Action Alternative predictions.

C-3

The C-3 Alternative would have the highest predicted fatal, injury and total crashes of all the Action Alternatives. The C-3 Alternative would be the least safe because the extra intersections, approaches, and suburban section would create turning traffic across US-95. This would still reduce the predicted crashes by half compared to the No Action Alternative. C-3 would have the longest five lane suburban section of the Action Alternatives. Crashes are predicted at a rate of 3.4 crashes per mile for the five lane suburban section while the rural four-lane divided section has a predicted rate of 1.1 crashes per mile.

C-3 would have the greatest number of approaches; five public road intersections, the most residential and commercial approaches, and the longest suburban section. The five intersections; Eid Road, Clyde Road, Cameron Road, North Old US-95, and South Old US-95, would be constructed to accommodate local traffic.

The C-3 Alternative would have the highest cost to both human life and societal monetary costs associated with crashes.

E-2 (Preferred Alternative)

The E-2 Alternative would have the shortest alignment, the fewest public road intersections, the fewest commercial and residential approaches and would have better weather conditions for roadway safety compared to W-4. E-2 would also have the greatest length of the four-lane divided highway. These factors all contribute to E-2 having the lowest predicted crash rate compared to the other alternatives. The E-2 Alternative is predicted to reduce the crash rate of the existing alignment by about 69 percent.

4.11 Visual Quality Effects

Construction of the US-95 project may have direct effects to visual quality. Effects are likely to occur in locations where construction of the proposed project would affect undisturbed landscapes, in close proximity to sensitive viewers (e.g. residences), and along areas where additional development is proposed. These effects are directly related to new cut and fill slopes, bridges and a new linear features created by the road itself (Visual Genesis 2005). Visual quality effects as perceived by the community are discussed in the Community Impact Technical Reports.

4.11.1 Visual Quality Assessment Findings

The degree of visual effects were categorized as low, moderate, moderate high and high as defined below:

Low. These conditions occur where viewers are less sensitive to change or the project follows existing portions of transportation routes or other heavily altered landscapes. Effects may cause no change or minimal change to existing visual resources. These effect levels were established to create a context for evaluating potential effects of alternative alignments to visual resources.

Moderate. These conditions occur where viewers would be sensitive to changes to the landscape, where changes are visible, but the project does not dominate the viewshed. Effects may cause some adverse change to visual resources.

Moderate High. These conditions occur where viewers are sensitive to change to the landscape, changes are moderately visible and they may dominate the viewshed. Effects may be adverse but not substantial.

High. These conditions occur where viewers are sensitive to changes to the landscape, changes may be highly visible, and they may dominate the viewshed. Because these conditions may result in a substantial or substantial change to visual resources, they may warrant mitigation.

Table 55. Visual Quality Effects shows the estimated percentages of visual effects to different visually sensitive areas. See Visual Resources Technical Report for more information.

Table 55. Visual Quality Effects

Alternative	Degree of Visual Effect	Percent of Alignment
No Action	0	0
W-4	Low	11
	Moderate	58
	Moderate High	23
	High	8
C-3	Low	9
	Moderate	68
	Moderate High	15
	High	8
E-2	Low	3
	Moderate	47
	Moderate High	25
	High	25

No Action

The No Action Alternative would only involve minor improvements and would not involve major soil disturbing activities, large structures, and realignments in new areas. Therefore, the No Action Alternative would have no effect to visual quality.

W-4

W-4 would traverse a relatively undisturbed pastoral landscape. Direct effects would occur where residences are within the foreground or middle ground views of other residences and are not screened by terrain. This would occur near the City of Moscow, Snow Road, Jacksha Road, and Thorncreek Road. A new bridge at Snow Road would create a long-term visual effect. During interviews with community representatives during the Delphi Panelist interviews, concern was expressed regarding the W-4 Alternative's light pollution effects on the University of Idaho Observatory and general visual effects to the University of Idaho Arboretum, surrounding neighborhoods, and planned recreational and residential facilities.

C-3

C-3 would follow existing US-95 along some of its alignment. It traverses both disturbed and relatively undisturbed pastoral landscapes. Effects are anticipated to occur where US-95 leaves the existing US-95 corridor and is within the foreground and middle ground views of residences and not screened by terrain. This would occur near South Clyde Road, Zeitler

Road and near Eid Road. This would affect the residential and recreation viewpoints located near the alignment, particularly the residences along Eid Road and the residential developments from near MP 342 to Cameron Road along the northern end of the alignment.

E-2 (Preferred Alternative)

E-2 would traverse both disturbed and relatively undisturbed pastoral landscapes. It would also traverse landscapes near the foothills of Paradise Ridge and could affect recreational viewpoints from Paradise Ridge and views from the University of Idaho Golf Course. Direct effects are anticipated to occur where US-95 leaves the existing US-95 corridor and is within the foreground and middle ground views of residences and not screened by terrain. This would occur at the residential viewpoints near the City of Moscow, Cameron Road, and Eid Road. A new bridge at Eid Road would create a long-term visual effect to residences. See Exhibit 31. View from E-2 Alignment near Eid Road (facing north). See the Visual Resources Technical Report for additional detail.

Exhibit 31. View from E-2 Alignment near Eid Road (facing north)

4.11.2 Community Perceptions

There are strong differing opinions regarding the visual effects of the W-4 and E-2 alternatives. The Citizens for a Safe Highway 95, claiming to represent people collectively owning 80 percent of the land along E-2, were in favor of the E-2 Alternative due to the "spectacular view" of the Palouse and of the City of Moscow for travelers as the route traverses just west of Paradise Ridge. They believe that the beauty of Paradise Ridge could transform the highway into a gateway for Moscow, and that E-2 could promote and preserve the Palouse landscape through scenic highway status. The group opposed the W-4 Alternative stating that it would disrupt westerly views and promote farmland conversion disrupting the agricultural setting (HDR 2005a).

The Paradise Ridge Defense Coalition, who opposed the E-2 Alternative, felt the expansion of the roadway should follow the existing route as much as possible in order to minimize the ecological footprint of the road. The argument against the E-2 Alternative centered on Paradise Ridge as a unique and valued feature in the community. In the view of those opposed to an E-2 alignment, the ridge should remain untouched because it provides both aesthetic and environmental value as the last remaining natural prairie in the area. As a focal point for community pride, Paradise Ridge serves as a reason both for and against the E-2 Alternative (HDR 2006).

4.12 Noise Effects

4.12.1 Noise Impacts

The FHWA has established NAC standards for several categories of land use activities. See Table 34. FHWA Noise Abatement Criteria (NAC). A traffic noise impact occurs when the existing or future noise levels approach (1 dBA below the FHWA NAC) or exceed the FHWA Noise Abatement Criteria (NAC) or when the predicted future traffic noise levels substantially exceed the existing noise levels, even if the predicted noise levels may not approach or exceed the FHWA NAC. The ITD Noise Policy for a substantial increase is 15 dBA over existing conditions which would be considered over twice as loud to the human ear. See Exhibit 22. Noise Receptor Locations. A $L_{eq,}$ A-weighted, one-hour, (L_{eqah}) noise measurement is used as the basis to assess the impacts that a roadway has on the sensitive receptors that are located along the proposed road.

The results of the noise modeling indicate that by 2037 the No Action Alternative would have the greatest number of impacted receptors and the W-4 Alternative would have no noise impacts. See Table 56. Summary of Noise Effects. The details regarding predicted noise levels at receptors are shown in Table 57. Predicted Noise Effects.

Table 56. Summary of Noise Effects

Alternative	Noise Impacts in 2037 (number or receptors)
No Action	9
W-4	0
C-3	1*
E-2	7**

*This receptor exceeds FHWA NACs but is displaced.
** Five of these impacted receptors are displaced.

Table 57. Predicted Noise Effects

No.	Address	Category	Existing L_{eq} dBA	No Action L_{eq} dBA	2037 W-4 L_{eq} dBA	2037 C-3 L_{eq} dBA	2037 E-2 L_{eq} dBA
1	3336 US 95	B	59.3	61.2	62.6	62.5	62.2
2	3335 US 95	B	55.6	57.4	59.0	58.5	59.4
3	3379 US 95	B	58.9	60.8	62.1	62.0	61.8
4	3455 US 95	B	57.9	59.8	58.0*	57.1*	41.6
5	3460 US 95	B	55.2	57.1	57.9	57.6	42.3
6	1010 Eid Rd	B	58.9	60.8	62.6*	62.4*	39.5
7	1971 Eid Rd	B	37.2	39.1	39.4	39.5	**56.9**
8	1071 Eid Rd, #5	B	37.3	39.1	39.4	39.6	**57.9***
9	1071 Eid Rd, #7	B	37.2	39.1	39.3	39.4	**58.9***
10	1071 Eid Rd, #9	B	37.1	39.0	39.2	39.3	**62.3***
11	1071 Eid Rd, #8	B	36.9	38.8	39.0	39.1	**60.9***
12	1071 Eid Rd, #2	B	36.9	38.8	39.1	39.2	**59.2***
13	1084 Eid Rd	B	36.8	38.7	39.0	39.1	**57.9**
14	3621 US 95	B	58.2	60.0	63.9*	38.5	32.9
15	3625 US 95	B	55.4	57.3	59.7	38.5	32.9
16	1005 Zeitler Rd	B	58.4	60.3	43.5	41.2	33.7
17	Undeveloped	G	34.5	36.3	35.2	38.5	42.7
18	Undeveloped	G	38.9	40.8	55.3	36.2	32.2
19	3672 US 95	B	60.1	62.0	43.6	40.7	33.7
20	3693 US 95	B	61.8	63.7	41.8	40.3	34.0
21	3125 US 95	B	54.5	56.4	41.8	40.2	34.0
22	3096 US 95	B	61.5	63.4	39.5	44.3	35.0
23	3094 US 95	B	63.7	65.6	39.5	44.4	35.0
24	3098 US 95	B	**67.1**	**69.0**	39.7	44.0	34.9
25	3082 US 95	B	60.7	62.6	39.4	44.8	35.1

No.	Address	Category	Existing L_{eq} dBA	No Action L_{eq} dBA	2037 W-4 L_{eq} dBA	2037 C-3 L_{eq} dBA	2037 E-2 L_{eq} dBA
26	3080 US 95	B	62.5	64.4	39.4	44.8	35.1
27	3060 US 95	B	62.6	64.5	39.1	45.7	35.4
28	3055 US 95	B	58.7	60.6	39.5	44.4	35.3
29	3045 US 95	B	59.4	61.3	39.0	44.8	35.9
30	3015 US 95	E	65.8	67.7	38.6	47.3	36.6
31	2979 US 95, #22	B	**66.7**	**68.6**	38.3	49.2	36.9
32	2979 US 95, #23	B	63.7	65.6	38.3	49.6	37.0
33	2979 US 95, #20	B	59.1	61.0	38.4	48.4	36.8
34	2979 US 95, #21	B	57.1	59.0	38.4	48.3	36.9
35	2979 US 95, #24	B	57.3	59.2	38.3	48.6	37.0
36	2979 US 95, #26	B	60.2	62.0	38.3	49.7	37.1
37	2979 US 95, #25	B	**67.0**	**68.9**	38.2	50.7	37.1
38	2979 US 95, #03	B	63.8	65.7	38.2	50.6	37.2
39	2979 US 95, #05	B	59.8	61.7	38.2	50.5	37.3
40	2979 US 95, #02	B	62.8	64.7	38.1	52.2	37.4
41	2979 US 95, #01	B	63.2	65.1	38.1	52.7	37.5
42	2949 Clyde Rd	B	58.5	60.4	38.1	52.5	37.6
43	2946 US 95	B	62.3	64.2	37.7	**69.0***	38.7
44	2936 US 95	B	59.6	61.5	37.7	60.1	39.2
45	2940 US 95	B	59.2	61.1	38.1	59.4	38.6
46	2922 US 95	B	**67.7**	**69.6**	38.0	64.8*	39.4
47	2921 Cameron Rd**	C	**67.1**	**69.0**	38.3	64.1*	39.7
48	2921 Cameron Rd**	C	**67.2**	**69.1**	38.3	64.1*	39.7
49	2921 Cameron Rd**	C	**67.4**	**69.3**	38.4	64.2*	39.7
50	2921 Cameron Rd**	C	59.2	61.1	38.2	58.1*	39.9
51	2921 Cameron Rd**	C	59.2	61.1	38.2	58.0*	40.0
52	2921 Cameron Rd**	C	59.0	60.9	38.1	57.9*	39.9
53	2880 US 95	B	65.5	**67.4**	39.0	62.9*	40.5
54	2880 US 95	F	65.4	67.3	39.0	62.8*	40.5
55	2860 US 95	F	64.4	66.3	39.0	62.3*	40.7
56	2850 US 95	F	65.9	67.8	39.2	63.3*	40.8
57	2848 US 95	B	65.8	**67.7**	39.4	63.6*	41.1
58	2845 US 95	B	59.8	61.7	39.8	60.3*	40.3
59	2820 US 95	F	65.3	67.2	39.8	63.4*	41.6
60	2822 US 95	B	55.7	57.6	39.7	55.7	42.4
61	2805 US 95	B	60.4	62.3	41.0	60.7	41.7
62	2740 US 95	F	59.0	60.9	43.0	58.6	45.8

No.	Address	Category	Existing L_{eq} dBA	No Action L_{eq} dBA	2037 W-4 L_{eq} dBA	2037 C-3 L_{eq} dBA	2037 E-2 L_{eq} dBA
63	2726 US 95	F	58.5	60.4	46.2	57.3	49.0
64	2720 US 95	F	64.0	65.9	52.0	62.4	52.2
65	2710 US 95	F	61.6	63.5	49.5	60.1	51.0
66	2670 US 95	F	64.4	66.3	54.6	62.8*	54.0
67	2650 US 95	F	64.8	66.7	56.3	63.2*	54.9
68	2650 US 95	F	66.1	68.0	59.2	64.5*	56.8
69	2551 US 95	F	62.2	64.1	62.4	60.8	54.9
70	2555 US 95	F	54.8	56.7	54.3	54.0	53.1
71	2500 US 95	B	54.5	56.4	54.3	53.8	57.8
72	2305 US 95	F	63.2	65.1	61.6	61.6	60.4
73	2205 US 95	F	62.8	64.7	61.4	61.4	60.7
74	2205 US 95	B	61.4	63.3	60.5	60.4	60.3
75	2113 US 95	F	59.6	61.5	59.7	59.3	59.7
76	2113 US 95	B	56.2	58.1	57.6	56.6	57.8

Bolded numbers indicate a noise impact
*-receptor will be displaced (receptors 47-52 are Green Acres RV Park and considered one displacement)

The seven impacts for the E-2 alignment would result from substantial increases from the existing noise levels of 15 dBA or more. Five of these impacted receptors are displaced. The remaining two receptors (Receptors 7 and 13) would be considered a noise impact.

Receptor 18 shows a substantial increase with the W-4 alignment, however it is a Category G receptor, undeveloped and unplatted lands, therefore it has no NAC threshold and is not considered an impact. See the Noise Technical Report for details.

4.12.2 Noise Abatement

23 CFR 772 requires that if a noise impact is identified then noise abatement must be considered. Measures which are determined to be both reasonable and feasible should be incorporated into the project. ITD worksheets for feasibility and reasonability are included in the Noise Technical Report.

The required considerations for abatement include:

- Acquisition of property rights for construction of noise barriers
- Construction of noise barriers
- Noise insulation of public use or non-profit institutional structures

Optional considerations for abatement include:

- Traffic management measures
- Alteration of horizontal and vertical alignments
- Acquisition of real property or interests therein for buffer zones

The required and optional abatement measures were not considered feasible and reasonable for the impacted receptors which were not displaced. However, any future receptors should be required to adhere to setback regulations deemed appropriate by the local jurisdiction. The two impacted receptors (Receptors 7 and 13) that are not displaced by the E-2 Alternative are located along Eid Road. The E-2 Alignment would be on an elevated bridge structure near the receptors. Construction of a noise wall on the bridge structure would be feasible but would not be reasonable based on the cost benefit calculations. See Noise Technical Report for details.

4.13 Air Quality Effects

4.13.1 Air Quality

The project is located in an attainment area for PM_{10}, $PM_{2.5}$ and CO so no quantitative air quality conformity analysis was conducted. This project would not affect any roadways for which forecast traffic numbers would exceed the screening volumes as determined by ITD Project Level Air Quality Screening Procedure. The project is also considered in the regional transportation planning documents which consider the cumulative effects of transportation projects on regional air quality. No project-level air quality concerns were raised during the DEIS development that would require evaluation. It can therefore be concluded that the project would have no significant adverse effect on air quality or and CO, PM_{10} or $PM_{2.5}$ concentrations. There are currently no EPA models or methodologies available to analyze individual projects for their potential to cause or contribute to PM_{10} or $PM_{2.5}$ concentrations.

4.13.2 Mobile Source Air Toxins (MSAT)

The realigned and additional travel lanes resulting from the Action Alternatives would move some traffic closer to nearby homes, schools, and businesses. Therefore, each alternative may have localized areas where ambient concentrations of MSAT could be higher than the No Action Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the realigned roadway sections that would be built as part of alternatives W-4 and E-2. The magnitude and the duration of these potential increases resulting from the Action Alternatives compared to the No Action Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health effects.

Effects could be offset with increased speeds and reduced congestion that is associated with lower MSAT emissions for the Action Alternatives. Also, MSAT would be lower in other locations such as near the existing US-95 alignment when the majority of the traffic shifts away from most of the sensitive receptors in the area.

On a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, would over time, in almost all cases, cause regionwide MSAT levels to be significantly lower than today.

4.13.3 Greenhouse Gas Emissions (GHG)

While there are no accurate methods for predicting project effects to climate change, climate change is believed to be associated with the emissions of greenhouse gases (GHG) such as CO_2. GHG emissions, including CO_2, are directly related to energy consumed. Surface transportation-related emissions can be related to VMT. Table 58. Estimated Vehicle Miles Traveled (VMT) shows the calculated and projected VMTs for the No Action and Action Alternatives. Fuel consumption by alternative is in Section 4.15 Energy Effects.

Table 58. Estimated Vehicle Miles Traveled (VMT)

Alternative	Existing 2010 VMT	Projected 2037 VMT
No Action	34,008	54,042
W-4	35,885	57,026
C-3	31,862	50,633
E-2	31,433	49,951

E-2 is expected to have the lowest projected VMT and to generate the least amount of GHGs by 2037. E-2 would result in a 7.6 percent decrease in VMTs compared to the No Action Alternative.

Examples of strategies being implemented to reduce GHG levels include providing alternatives to driving alone (such as carpooling, vanpooling, and transit); developing transportation facilities that encourage transit, high-occupancy vehicle (HOV), bike, and pedestrian modes; supporting land use planning and development that encourage such travel modes (such as concentrating growth within urban growth areas); and optimizing system efficiency. While the project would not preclude implementation of these strategies, due to the rural nature of the project area they are not included as part of the project alternatives.

4.14 Hazardous Materials Effects

The Hazardous Materials Scan prepared for the project identified sites with Underground Storage Tanks (USTs), Aboveground Storage Tanks (ASTs), and other sites containing hazardous materials and requiring cleanup. Table 59. Hazardous Material Sites Effects summarizes the effects by alternative. Exhibit 32. Hazardous Material Site Effects shows the location of the hazardous material sites relative to the Action Alternatives. See the Hazardous Materials Technical Report for more detail. Mitigation measures are discussed in Chapter 9, Environmental Commitments.

No Action

The No Action Alternative would not require right-of-way acquisition or major construction. Therefore, there would be no effects to hazardous material sites.

W-4

This alternative would affect four sites, primarily ASTs associated with farms and residences such as propane tanks and petroleum tanks of 500 gallons or less. These would be properly handled and disposed of during right-of-way acquisition and would pose a low risk.

C-3

C-3 would affect 13 sites, one of which is Goodman Oil, a listed site with a contaminated plume. This would need to be remediated if acquired. The remaining sites are low risk because there are no records of leakage and they are easily visible.

E-2 (Preferred Alternative)

E-2 would affect four sites, primarily ASTs that contain primarily propane or petroleum in tanks of 500 gallons or less. These would pose a low risk to the project because they are not leaking and are easily visible. The vast majority of homes built before 1950 contained substantial amounts of lead-based paint. Due to the age of many of the existing structures there is the potential risk of lead-based paint and asbestos contained in the structures that would be demolished by each alternative.

Exhibit 32. Hazardous Material Site Effects

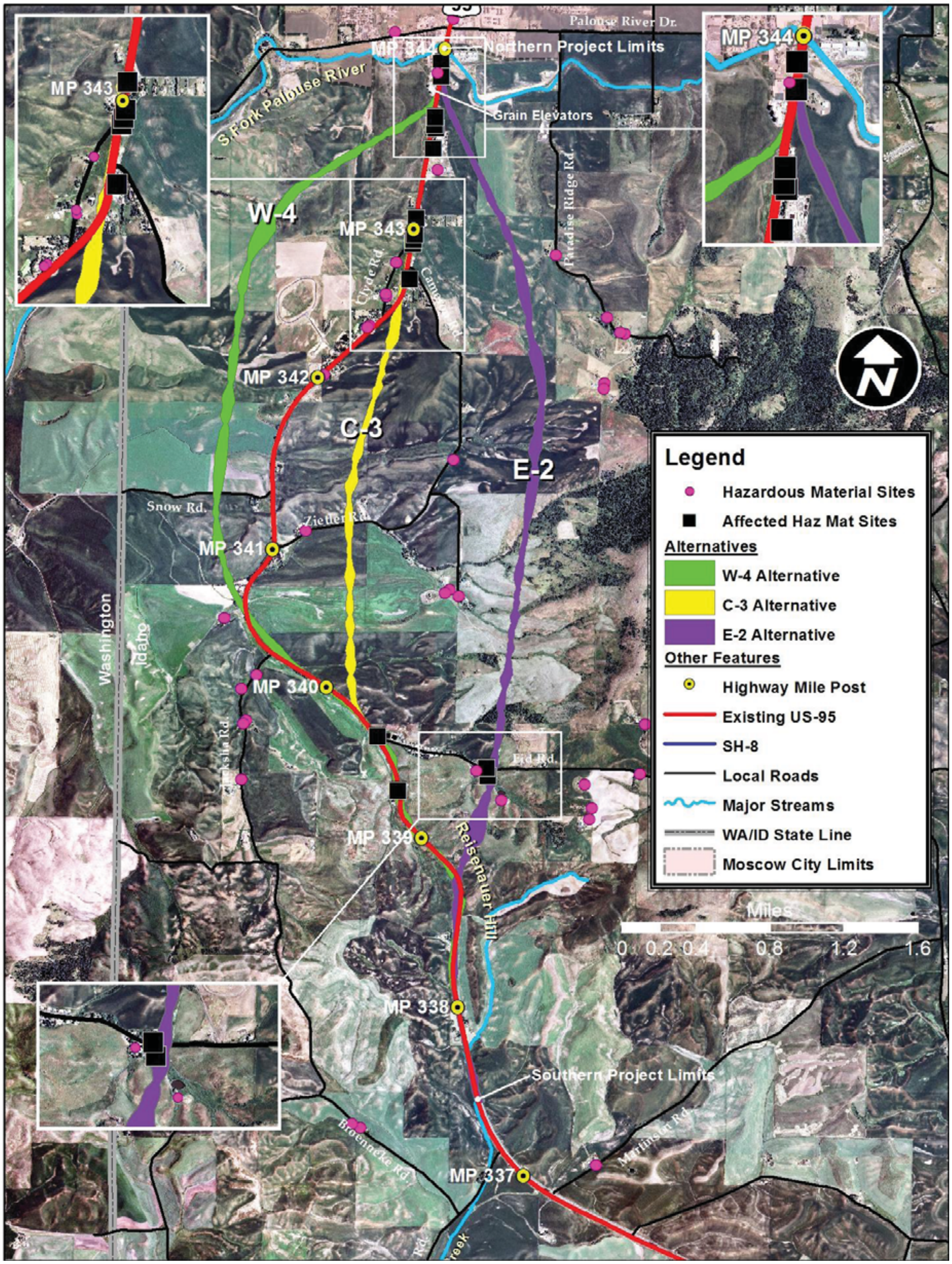


Table 59. Hazardous Material Sites Effects

Alternative	Number of Affected Sites	Location and Description of Affected Sites
No Action	0	None
W-4	4	Four 200 to 500 gallon tanks with propane or petroleum
		3460 Hwy 95 (Private-propane)
		2500 Hwy 95 (Private-AST*)
		2211 Hwy 95 (Boat shop-removed UST**)
		1010 Eid Rd (Private-propane)
C-3	13	Thirteen properties with 200-500 gallon tanks with propane, petroleum or oil tanks. The Goodman Oil property also has 3 bulk storage ASTs and a subsurface plume could be affected if acquired.
		3460 Hwy 95(Private-propane)
		2500 Hwy 95 (Private-AST)
		2211 Hwy 95 (Boat shop-removed UST)
		2710 Hwy 95 (Gary's Heating & Oil-petroleum)
		2710 Hwy 95 (Goodman's Oil-Petroleum pumps & AST)
		2922 Hwy 95 (Johnson's Trucking-UST & AST)
		2880 Hwy 95 (Mr. Cabinet Mfg.-propane)
		2850 Hwy 95 (Private-propane)
		2848 Hwy 95 (Upholstery shop-propane)
		2820 Hwy 95 (Private-propane)
		2650 Hwy 95 (Business-propane)
		Hwy 95 (Mundy's Machine and Welding-propane)
		1010 Eid Rd. (Private-propane)
E-2	4	Four 200-500 gallon tanks with propane or petroleum
		2500 Hwy 95 (Private-AST)
		2211 Hwy 95 (Boat shop-removed UST)
		1071 #7 Eid Rd. (Private-propane)
		1084 Eid Rd. (Private-propane)

* AST=Aboveground Storage Tank
** UST=Underground Storage Tank

4.15 Energy Effects

The alternatives are expected to result in slightly different operational energy usage. The alignments presented in this DEIS have been designed utilizing the same criteria. All have a posted speed of 65 mph in the rural section and 45 mph at the north end, in the urban area. All alternatives would traverse the rolling terrain of the Palouse and have similar maximum grades and curvature.

Operational energy usage by alternative was estimated by projecting the alternatives' ADTs for the 2037 design year then calculating the projected VMTs. The fuel usage per alternative was based on vehicle type (heavy truck or passenger vehicle) consumption rates and the highway length for each alternative. Table 60. Estimated Operational Energy Use summarizes the results per alternative.

Table 60. Estimated Operational Energy Use

Alternative	Alternative Length	Projected 2037 VMT	Projected 2037 Fuel Use (gal/day)
No Action	6.34	54,042	2,939
W-4	6.69	57,026	3,101
C-3	5.94	50,633	2,753
E-2	5.86	49,951	2,716

Total fuel consumption for this segment of US-95 is currently estimated to be 1,773 gallons per day. The No Action Alternative is estimated to utilize 2,939 gallons of fuel per day by the 2037 design year. Based on the results, E-2, which is the shortest alignment, would result in the least fuel usage through the project corridor.

4.16 Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

Council for Environmental Quality (CEQ) NEPA Regulations [40 CFR 1502.16] requires discussion of the "relationship between short term uses of the environment and the maintenance and enhancement of long-term productivity" as part of an EIS. The proposed action was evaluated to determine whether long-term benefits are worth the short-term effects. Short-term effects are anticipated with the construction of any Action Alternative. These include, but are not limited to, travel delays, traffic congestion, restricted access to residences and the commercial establishments in the project area, visual intrusions to residents and motorists, noise to residents and other effects. The need for short-term and long-term transportation improvements is analyzed in an iterative, on-going planning effort at all levels of government.

The maintenance and enhancement of long-term productivity of the environmental resources of an area is based on a number of different factors, including transportation systems. The need for present and future transportation improvements is programmed and analyzed as part of the compilation of the Idaho Transportation Investment Program (ITIP). These plans take into account the requirements for long-term productivity of the transportation system.

The improvement of the aging transportation infrastructure contributes to the maintenance and enhancement of long-term productivity of the communities in the project area and would outweigh the short-term effects. Additionally, US-95 is identified as a NAFTA route, which connects Canada to Mexico through Idaho and other western states, and contributes beyond the local and regional long-term productivity of this community.

ITD is committed to mitigating both short- and long-term effects to the environment.

4.17 Irreversible and Irretrievable Commitment of Resources

CEQ's NEPA regulations require discussion of any irreversible or irretrievable commitment of resources in implementing a federally funded project [40 CFR 1502.16]. This applies primarily to use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity, that are renewable only over long periods of time. The irretrievability of those resources applies to the loss of production, harvest, or use of natural resources. The implementation of any of the Action Alternatives would require a commitment of a range of natural, physical, human, and fiscal resources. The conversion of private land from existing residential, agricultural, commercial, and native habitat uses to public highway is considered an irreversible commitment of resources. Despite that, if at some future time a greater need arises for use of the land or if the proposed public highway is no longer needed, the land could be converted to another use. To the greatest extent possible, the Action Alternatives would use existing right-of-way (ROW). See Table 61. Right-of-Way Effects.

Table 61. Right-of-Way Effects

Alternative	New ROW	Existing ROW	Total ROW
No Action	0	0	0
W-4	210	49	259
C-3	154	55	209
E-2	207	22	229

Regarding fiscal resources, the Action Alternatives would require the commitment of funds for constructing, operating, and maintaining the proposed roadway. Funds would be required for right-of-way acquisition, construction, mitigation, and long-term maintenance of the new facilities. The use of public funds for the proposed action would be irreversible and irretrievable. Considerable amounts of labor, fossil fuels, and highway construction materials would be expended and would not be retrievable. Concrete, aggregate materials used in concrete and asphalt production such as sand and gravel, along with steel, water, and bituminous material, would all be used for the proposed action. Additionally, large amounts of labor and natural resources would be used in the fabrication, preparation, and transportation of construction materials. Such expenditures generally are not retrievable. The proposed action has the potential to change land use patterns in the project area by increasing visibility of, and accessibility to, developable land. Such change in land use patterns could result in different effects on the social, built, and natural environment, than otherwise would occur with existing development patterns.

Where historic resources are adversely affected such use would be irretrievable but would be minimized and mitigated. The proposed action also would replace land currently functioning as wildlife habitat, riparian areas, and wetlands with highway lanes and approaches. Where wetlands or floodplains cannot be avoided or effects cannot be further minimized, the proposed action would compensate for lost functions and values through compensatory mitigation. While wetland and floodplain mitigation are intended to create additional wetlands or floodplains that restore functions, the loss of the actual habitat affected is considered irreversible. The commitment of the aforementioned resources is based on the concept that residents in the immediate area, region and state would benefit from the improved facility, as would NAFTA related travel. These benefits would consist of improved safety, and increased capacity to accommodate current and future traffic demand.

5 SECTION 4(F) EVALUATION

5.1 Regulatory Framework and Policies

Section 4(f) Resources are governed by the following:

- 23 CFR 774-Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f))
- 49 USC 303-Policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites

Section 4(f) of the United States Department of Transportation Act of 1966, codified in Federal law at 49 USC 303, states that "It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Section 4(f) specifies that "The Secretary [of Transportation] may approve a transportation program or project…requiring the use of any publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance (as determined by the federal, state or local officials having jurisdiction of the park area, refuge, or site), only if:

- There is no prudent and feasible alternative to using that land, and
- The program or project includes all possible planning to minimize harm to the park, recreational area, wildlife and waterfowl refuge, or historic site resulting from the use."

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development. Section 4(f) "use" is defined as:

- When Section 4(f) land is permanently incorporated into a transportation facility;
- When there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose; or when there is a constructive use of a Section 4(f) property. Constructive use occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the

protected activities, features or attributes of the resource are substantially diminished [23 CFR 774.17].

5.2 Proposed Action and Purpose and Need

The purpose of this project is to improve public safety and increase highway capacity on US-95 south of Moscow between Thorncreek Road (MP 337.67) and the South Fork Palouse River Bridge (MP 344.00). Within the project limits, US-95 does not meet current American Association of State Highway and Transportation Officials (AASHTO) Standards. The primary deficiencies of the roadway are described in detail in the DEIS, Chapter 1, Introduction and Section 3.10, Transportation.

5.3 Section 4(f) Properties

The Deesten/Davis Farmstead is the only National Register of Historic Properties (NRHP) eligible cultural resource that could be affected by the Action Alternatives and is the only Section 4(f) resources considered in this Section 4(f) Evaluation. See Exhibit 33. Deesten/Davis Farmstead as viewed from US-95.

Exhibit 33. Deesten/Davis Farmstead as viewed from US-95

The Deesten/Davis Farmstead (Field #US-95-22) is located immediately west of US-95 and approximately four miles south of Moscow between Zietler Road and Jacksha Road. It consists of eight primary buildings; a farmhouse, garage, barn, granary, chicken house, smoke house, shop, equipment shed and groves of trees. Within the historic site boundary, the property is estimated to be 10.43 acres and is surrounded by actively cultivated Palouse farmland.

The two groves of trees were planted in the 1930s by the Civilian Conservation Corps. There is also an orchard, cottonwoods, a conifer windbreak and a black walnut tree from Germany. The farm was originally patented to William Plummer in 1882 as a cash entry land claim (BLM 2005) and is remarkably intact with the house, barn and other primary buildings in good condition with no intrusive modern elements. The property is eligible for NRHP listing under Criterion A, for its association with regional agricultural development. The property is also eligible under Criterion C as an excellent example of early twentieth century farmstead architecture and layout.

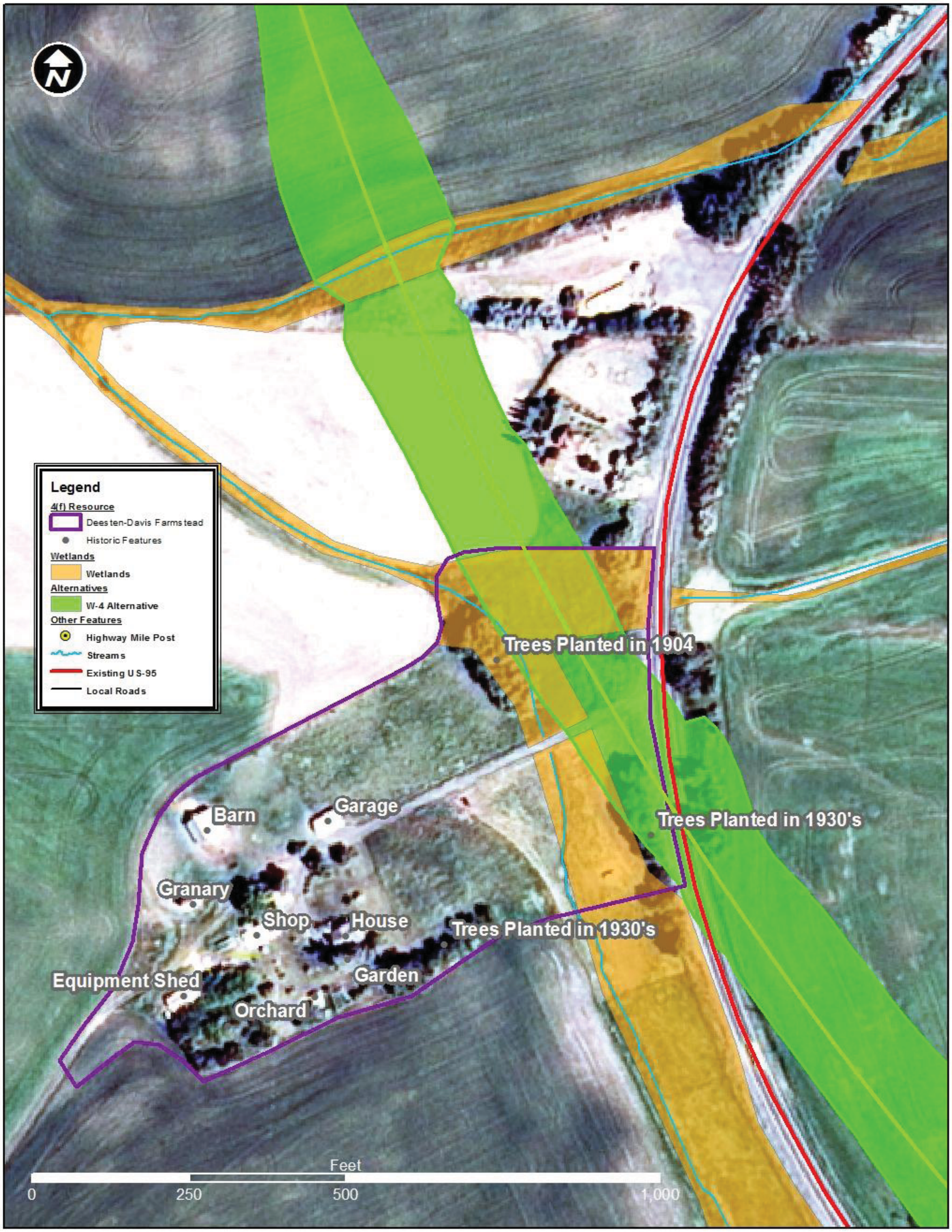
5.4 Section 4(f) Use

The W-4 Alternative would result in an adverse effect to the Desteen/Davis Farmstead under Section 106 of the NHPA and would constitute a use under Section 4(f) of the USDOT Act. The No Action, C-3 and E-2 alternatives would not result in Section 4(f) use.

The W-4 Alternative would encroach upon approximately 1.73 acres of the Desteen/Davis Farmstead. This encroachment would not adversely affect any of the historic buildings but would remove several of the trees which were planted in the 1930s by the Civilian Conservation Corps. These trees provide a partial visual screen between the roadway and the farmstead. Removing the trees could alter the views of the farmstead adversely affecting the setting. Acquiring right-of-way and removing the trees would result in a Section 4(f) use.

There are approximately 2.23 acres of Wetland 9 within the boundary farmstead. The W-4 Alternative would affect 0.84 acres of the wetland located on the farmstead. See Sections 3.6 and 4.6 for a discussion of wetlands. See Exhibit 34. Deesten/Davis Farmstead Section 4(f) Use.

Exhibit 34. Deesten/Davis Farmstead Section 4(f) Use



5.5 Avoidance Alternatives

The avoidance alternatives would include using either the C-3 or E-2 Alternatives. Shifting the roadway approximately 300 feet to the east would also avoid the historic site boundary. This would require W-4 to follow the existing alignment in this area which experiences many accidents due to the substandard curvature. Realigning the W-4 Alternative in this location to follow the existing US-95 alignment would not improve the substandard curvature of roadway in that area. This would not meet the project purpose and need.

5.6 Measures to Minimize Harm

If the W-4 Alternative is identified as the Preferred Alternative in the FEIS, a determination of adverse effect and Memorandum of Agreement (MOA) will be prepared and implemented at that time to comply with Section 106 of the NHPA. The MOA will be developed in coordination with the SHPO, the ACHP, ITD and FHWA. It will outline agreed upon mitigation measures to minimize harm to the resource which could include measures such as planting replacement trees along the highway right-of-way to offer screening of the farmstead or additional photo-documentation.

5.7 Coordination

The following coordination relevant to Section 4(f) has been completed See Appendix 1, Key Agency Correspondence and Forms for associated documentation.

- The Nez Perce Tribe and SHPO were contacted in 2003 regarding the Area of Potential Effect (APE).
- Cultural resource surveys and reports were completed between 2003 and 2011. See Section 3.4. Cultural Resources.
- Tribal consultation letters and meetings were held annually between 2003 and 2012. See Chapter 7, Public Involvement and Agency Coordination.
- The report titled *Cultural Resources Surveys of Idaho Transportation Department Proposed US-95, Thorn Creek Road to Moscow, Phase 1; Project Latah County Idaho (AHS 2006)* was submitted to the Idaho SHPO. SHPO concurred with the suggested NRHP eligibility and determination of effects for the alternatives in January 2, 2007.
- The report titled *Historic Resources Survey update to An Historic Buildings/Structures Survey for the Idaho Transportation Department's Proposed US 95, Thorn Creek Road to Moscow, Stage 1 Project, Latah County, Idaho (November 2011)* was submitted to SHPO. SHPO determined that one additional

resource, the Mountain Mart or Goodman Oil building is eligible for listing on the NRHP.

- During the 45-day public comment period for this DEIS, the Department of Interior (DOI) and SHPO will have an opportunity to review and provide comment on the DEIS and Section 4(f) Evaluation. Comments will be addressed in the Final Environmental Impact Statement (FEIS).

6 INDIRECT AND CUMULATIVE EFFECTS

6.1 Indirect Effects

This section evaluates the potential indirect effects of the alternatives.

6.1.1 Regulatory Framework and Policies

Relevant laws, regulations and guidance that pertain to indirect effects include:

- 40 CFR 1500-1508-CEQ Regulations
- 40 CFR 1508.8- Effects
- 23 CFR 771-FHWA Environmental Impact and Related Procedures
- Technical Advisory (TA) 6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents
- FHWA Interim Guidance: Indirect and Cumulative Impacts in NEPA
- FHWA Position Paper on Secondary and Cumulative Impact Assessment

6.1.2 Methodology

This chapter evaluates the indirect (secondary) effects of the alternatives which might occur in the reasonably foreseeable future. Indirect effects may include highway-related growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems [40 USC 1508.8].

In this analysis, indirect effects are primarily resulting from land development which could occur due to improved accessibility and mobility in the area as a result of the project. Indirect effects can have either beneficial or adverse effects on communities and natural resources.

The Delphi process was used to evaluate the project's indirect effects resulting from induced development. The process relies on the opinions of a panel of experts to provide their assessment of likely future outcomes by responding to several rounds of questions. This process included:

1. Collecting information about factors that are the most likely to influence future land development patterns

2. Making an estimate of the probable magnitude and direction of change in development patterns (i.e., indirect land use effects)

Several types of data were used to identify factors that would affect development patterns:

- Socio-economic conditions (population, employment by sub-area, and household characteristics)
- Land use patterns (location, type and extent of land development in the study area vacant land, building permits by type and location, development capacity)
- Transportation system characteristics
- Public services (primarily the availability of water and sewer connections) and
- Public policy (land use plan designation and zoning, economic development)

The induced growth analyses and findings are presented in the *Community Profile and Induced Development Technical Report* (December 2005). Additional interviews were conducted in November 2011 and the findings were summarized in a supplemental report (HDR 2011).

6.1.3 Existing Conditions

Growth Trends and Land Use

The majority of the study area is agricultural with accompanying farmhouses and accessory buildings. There are clusters of residential development along portions of the corridor (Zeitler Road, Cameron Road, Eid Road, and Clyde Road) and two areas that have a concentration of mobile homes (Woodland Heights Mobile Home Court and Hidden Village/ Benson Mobile Home parks). The northern portion of the corridor is more highly developed with a mix of uses emphasized on auto-oriented businesses.

The northern project limit extends into the City of Moscow Area Of Impact which is zoned commercial and industrial. South of Moscow, the area was recently rezoned for auto-related commercial. The rural, southern portion of the project area is zoned to support continued agricultural and forestry use in the county. The only type of residential development allowed in unincorporated Latah County is rural residential (one unit per acre). Along the alignment development is concentrated at the main county and private roads.

Indirect Effects

South of Moscow all the Action Alternatives would have a moderate to low potential to induce development in the corridor. Land use in the study area is expected to remain very similar to current conditions. Eighty-three percent of the Delphi panelists acknowledged that development is already occurring at a slow rate in the project area. They acknowledge that once the final alternative is selected, pace and intensity would increase due to the alleviation of uncertainty as to the location of the alignment.

The Delphi panelists felt that the growth would occur in the area approximately one mile south of the Moscow city limits, regardless of the alternative selected. Due to the proximity to Moscow this growth would be consistent with planning documents and existing land uses. Panelists also felt that additional development is likely to occur along the US-95 alignments that are transferred to the North Latah Highway District.

The No Action Alternative would only include safety improvements on the existing alignment and would not induce development or result in substantial indirect effects.

Any of the Action Alternatives would benefit regional trade and could facilitate new commercial and industrial uses locating to the south of Moscow in areas which are already zoned for these purposes. They would all have increased development along their alignments, however, they would be limited by the City and County land use and zoning designations. All alternatives would tie into existing county and private roads and therefore, the trend of development at these intersections and roadways would continue.

A majority of the Delphi panelists felt that the type and pace of development along the county roads of Eid, Zeitler, Snow, and Sand roads would remain constant due to the lack of direct access to the proposed alignments. Property values in the general corridor area for all of the Action Alternatives would be expected to increase immediately south of Moscow and would remain unchanged in the rest of the corridor.

To promote an efficient and safe transportation system and to maintain the agricultural and rural character of the area, the Latah County Comprehensive Plan requires that limits be placed on the number of access points to state and federal highways; and encourages bike and pedestrian routes and mass-transit as transportation options. See Chapter 9, Environmental Commitments.

Highway-induced development and other indirect effects are expected to be moderate due to the following:

- Access control along the highway is required by Latah County. The alternatives would have Type IV access control that would limit the number and spacing of approaches and access points.
- Latah County would continue to enforce the zoning regulations which only allow low-density residential development.
- The agricultural and rural character of the corridor will be maintained and will ensure consistency with the existing land use plans.

Indirect Effects by Resource

Social. The indirect effects of development may include increased noise, light and visual effects on surrounding areas. Visual quality could be degraded due to exposed soils, erosion, unnatural slopes, the addition of new roadways and structures, and changes in vegetation. There could be increased use of recreational facilities, public resources, schools, and emergency services, utility distribution, buildings and traffic along the highway and south of Moscow.

Areas south of Moscow and adjacent to the existing highway that are currently identified for development may experience higher noise levels over time. ADT volumes on this section of US-95 are expected to increase and noise levels would increase proportionately. However, they would not result in noise levels that would approach or exceed FHWA noise impact levels.

W-4 would have increased noise and visual effects to the University of Idaho Arboretum, located on a hill approximately three-quarters of a mile north of W-4. It would have potential effects to the planned ball fields and nearby senior center on the southwest side of Moscow approximately one-half mile north of W-4. W-4 would also have potential noise and visual effects to a master-planned community approximately one-quarter mile north of W-4. A new development planned near the C-3 Alignment could potentially increase traffic and traffic related conflicts and access issues in the area. C-3 would have indirect effects to businesses and approaches along the existing US-95 alignment.

The primary indirect effect of E-2 would be a visual effect to residents on Paradise Ridge due to the roadway alignment and acceleration of development. See Community Impact Technical Reports for more details.

Economic. Indirect effects to economic conditions could involve changes to visibility and access or result from declining sales or client bases that may cause existing businesses to move to new locations or cause new businesses to locate in other areas. Vehicular access is important for customers to access the business establishments and for suppliers and shipment ingress and egress. Temporary disruptions to access could adversely affect businesses. Visibility could affect retail businesses requiring drive-by traffic but could also affect non-retail businesses.

C-3 is believed by business owners to have the least indirect effects because the access would be similar, although it would be changed to a limited access facility. Traffic would continue to pass by the existing businesses which would encourage businesses to stay or locate in the area. W-4 and E-2 would have greater effects to visibility and access to existing businesses; however; they could also potentially encourage growth in the area. While safety and direct routes to and from Moscow and Lewiston are also believed to be an important consideration for area businesses and goods movement, the travel times and safety between Action Alternatives does not differ substantially.

Farmland. There could be more conversion of farmland up to one mile south of Moscow where growth is predicted with any of the alternatives. W-4 could result in greater indirect effects compared to the other alternatives because there are larger tracts of farmed land on the western corridor compared to the farmland near the E-2 corridor. The rate of farmland conversion for W-4 could also be expected to be higher because it would be closer to the universities, more accessible to the cities and closer to planned developments.

Increased development could result in farmland fragmentation for any of the alternatives. Farming smaller fields and having to transport equipment across roadways or between separated fields could decrease efficiency and affect the viability of farming. Additional expenses to the producer caused by smaller operational units and the increased demand for development property could result in the land being used for purposes other than agricultural production. The loss of agricultural land would also be felt by farm services within the area. For additional information regarding indirect effects to farmlands see the Farmland Technical Report.

Wetlands and Tributaries. Wetlands and tributaries are present throughout the corridor including at the north end of the project within the City of Moscow area of impact. Development is already expected to occur within the City of Moscow area of impact regardless of the project. Sections 401, 402 and 404 and of the Clean Water Act regulate activities in waters of the US and would require the replacement of lost functions and values of waters of the US including wetlands.

Development could increase the amount of impervious surfaces, thus increasing the potential for high peak flows, increased sediment, incised banks, pollutants, and increased water temperatures. Since development is likely to be concentrated south of Moscow, developers would also be required to comply with City stormwater ordinances to minimize those effects. See the Wetland Technical Report for more detail.

Floodplains. Indirect effects to floodplains may result from induced residential and commercial growth. These may involve placing fill in the floodplains/floodway, vegetation removal, soil tilling, grading, and channel modification. These actions would degrade floodplain function including flood storage.

The floodplains (and a regulatory floodway) in the project area are concentrated at the north end of the project within the Moscow Area of Impact where growth is expected and along the W-4 alternative. There is no floodplain along the southern parts of the C-3 and E-2 alternatives. Development is required to comply with local floodplain regulations which would not allow a more than a one-foot rise in base flood elevations; therefore, none of the alternatives would likely result in indirect effects to floodplains.

Groundwater. The groundwater in the project area could be indirectly affected by the increase in impervious surface, increased development primarily south of Moscow where induced growth is anticipated. Development impacts to groundwater will be minimized through the compliance with the NPDES Construction General Permit and BMPs which will require quantity and quality treatment for most new developments. Limited access to US-95 would also minimize the potential induced growth and would minimize potential impacts to groundwater.

Vegetation. Thirty-two areas were identified as Palouse remnants during the 2005 inventory (Litchardt 2006). The primary threat to the persistence of Palouse remnants in their present state is colonization by weeds; expansion of those present as well as invasion by new arrivals. All remnants identified in the project area are bordered completely or partially by weedy vegetation. See the Vegetation Technical Reports and the Biological Assessment Technical Report.

New roadway alignments, induced development and weed distribution through vehicles can contribute to the establishment and spread of weeds and could contribute to the degradation of nearby Palouse remnants. Remnants within 0.6 miles of the highway are at greatest risk to weed invasion; however there are existing infestations of weeds surrounding all of the remnants (Lass and Prather 2007). Intensively managed cropland is believed to provide a more efficient buffer to new weed invasion compared to native vegetation or CRP plantings.

There are no known Palouse remnants within one mile south of Moscow; however, two remnants are within 1.25 miles south of Moscow and could potentially be affected by induced development. The numbers of Palouse remnants near the alignments are presented in Table 62. Palouse Remnants near Alternatives.

Table 62. Palouse Remnants near Alternatives

Alternative	Palouse Remnants near Alignment
No Action	0
W-4	12
C-3	14
E-2	24

W-4 and C-3 would be within 1000 feet of the nearest remnant. This could introduce new weeds contributing to the degradation of the remnant. Six Palouse remnants occur within 1000 feet of alternative E-2 and the closest is within 300 feet (Lass and Prather 2007). This includes the South End Paradise Ridge Conservation Site documented by the Idaho Conservation Data Center (CDC) in 1996 and a smaller remnant documented by CDC in 2005 as a conservation site. The Paradise Ridge is already being affected by new residential development independent of the proposed project. The CRP land could be affected by weed invasion.

There are sites in the project vicinity for which restoration activities (ecological weed control, native plant establishment and establishment of Spalding's catchfly) are occurring or planned. The E-2 Alternative would not directly affect these areas but it would bring the roadway closer compared to the other alternatives. While invasive weeds are already present to differing extents on the sites, the closer alignment could contribute to weed establishment in sites near the road. Measures that will minimize impacts due to potential weed infestations include, limiting access through the corridor which will limit future development, constructing farmable slopes, implementation of the SWPPP, and development of a weed control plan and seed mixes that will minimize weed establishment during and after construction. See Chapter 9. Environmental Commitments.

While none of the alternatives would directly affect federally listed threatened or endangered plants, they would bring the road closer to the Spalding's catchfly population and Palouse remnants. This could introduce weeds or have other indirect effects that could affect Spalding's catchfly plants found near the project area. The distance of each alternative from the Spalding's catchfly plants are shown in Table 63. Alternative Distances to Spalding's Catchfly. The project May Affect but is Not Likely to Adversely Affect (NLAA) Spalding's catchfly due to these potential indirect effects. See Biological Assessment Technical Report. Measures that will be taken to minimize harm are described in Chapter 9, Environmental Commitments.

Table 63. Alternative Distances to Spalding's Catchfly

Alignment	Approximate Distance to Spalding's Catchfly Population (feet)
No Action	1,640
W-4	1,573
C-3	2,102
E-2	4,757

Fish and Wildlife. Growth would occur with or without the project. There would likely be more dense development at the north end of the project which is already developed and lacks suitable wildlife habitat.

Development in suitable wildlife habitat and movement corridors or increased development density could further restrict migration across the US-95 corridor. The types of developments that could affect wildlife movements are commercial, industrial, and higher density residential that would occur in or near Palouse remnants, pine stands, ungulate habitat, wetlands or water resources. This development could reduce habitat connectivity, increase habitat fragmentation, and create isolated blocks of habitat. In the long term this lack of genetic diversity could result in weaker subpopulations. See the Wildlife Technical Reports for more information.

Roads constructed due to indirect development can introduce weeds and transportation related pollutants like salt and automobile emissions. Historically, concentrations of lead in vegetation tended to be higher near roadways and could be ingested by deer. Today, lead is no longer an issue due to use of unleaded gasoline.

Deer move throughout the entire project area feeding on agricultural crops and other vegetation and are not confined to the timbered areas of Paradise Ridge. While development and associated road improvements may temporarily displace deer, they are extremely adaptable to humans. The development in areas that might serve as suitable habitat would have minimal effects and no measurable indirect effects are anticipated.

Elk tend to stay closer to security and seek cover more than deer. Therefore, induced growth along the E-2 corridor would have the greatest effect on elk because the route passes through existing cover and foraging areas in agricultural fields or CRP land adjacent to cover.W-4 passes to the east of an area of suitable habitat near the Idaho-Washington border; therefore, any development in that area could also result in indirect effects to elk. However, no long-term indirect effects on elk populations are expected to occur as a result of corridor construction within the project area (Melquist 2005a). While elk are not nearly as tolerant of humans as whitetail deer, elk have become more plentiful and expanded their range into more populated areas in recent years, and in doing so, they have become more tolerant of humans and human activity (Melquist 2005a). Elk will continue to move between Paradise Ridge and the patches of habitat along the Washington border (Rand per. com. 2005).

Movements of moose west of US-95 are less common, as habitat is limited and separated by three to four miles of agricultural fields. Nonetheless, exploratory movements by moose are likely to occur throughout the project area. The greatest indirect effect of development in this corridor might be the restriction of western movement by moose. However, their movement is random and occasional and there is ample suitable habitat outside of the area. See Wildlife Technical Reports for more detail.

6.2 Cumulative Effects

This section evaluates the potential cumulative effects of the Action Alternatives.

6.2.1 Regulatory Framework and Policies

Relevant laws, regulations and guidance that pertain to indirect effects include:

- 40 CFR 1508.7 Cumulative Effects
- FHWA Interim Guidance: Indirect and Cumulative Impacts in NEPA
- FHWA Position Paper on Secondary and Cumulative Impact Assessment
- Technical Advisory (TA) 6640.8A Guidance for Preparing and Processing Environmental and Section 4(f) Documents
- CEQ Guidance on the Consideration of Past Actions in Cumulative Effects Analysis
- CEQ Considering Cumulative Effects under the National Environmental Policy Act

6.2.2 Methodology

The methodology for determining the cumulative effects of the proposed project is based on *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ 1997).

Cumulative effects (impacts) are defined by the CEQ regulations as "the impact on the environment which results from the incremental impact of the [proposed] action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time" [40 CFR 1508.7]. Cumulative impacts include the direct and indirect impacts of a project together with the reasonably foreseeable future actions of other projects. According to CEQ's cumulative impacts guidance, the cumulative impact analysis should be narrowed to focus on important issues at a national, regional, or local level. The analysis should look at other actions that could have similar effects and whether a particular resource has historically been affected by cumulative actions.

During the scoping period, letters were sent to the resource agencies asking them to identify issues to be studied in the EIS. Ongoing coordination with the resource agencies has continued to evaluate the potential resource effects and to address agency concerns. Based on the concerns identified during the scoping process and the potential for direct and indirect effects from the project, the cumulative effect analysis focuses on four key resources.

- Farmland-This includes conversion of farmland to other uses.
- Wildlife and Vegetation –This includes barriers to wildlife movement, fragmentation of habitat and loss of habitat for wildlife, fish and vegetation.
- Wetlands and Tributaries-This includes degradation of water quality, loss of wetlands, effects to tributaries and effects to floodplains.
- Visual effects-This includes effects to the aesthetics of the area.

6.2.3 Cumulative Effects to Resources

Development

All of the Action Alternatives would have a moderate to low potential to induce development. Land use is likely to remain very similar to current conditions in the project area. The area immediately south of Moscow within the area of impact is zoned for more dense land uses and is being developed accordingly. The southern part of the project is designated for agricultural and rural residential land uses; therefore, the existing farmland is expected to be retained. US-95 will be designated as a Type IV limited-access highway through the majority of its length which will restrict future access to US-95 and limit induced development along the highway corridor.

The key past, present and reasonably foreseeable future development projects that were considered are discussed in the Community Impact Technical Reports. Potential developments that are considered in the City of Moscow Comprehensive Plan and considered in the evaluation of cumulative effects include: the Ring Road concept, a proposed rezoning and annex for a ball park, auto-urban commercial land use along US-95 south of Moscow, auto-urban residential growth south of Moscow and an industrial park north of the South Fork of the Palouse River. See Section 3.2.3 for additional information.

Wildlife and Vegetation

Past Effects. The project is within the Palouse Bioregion. Historically, the area had scattered Ponderosa pine stands with shrubs and native bunchgrasses. Beginning in the early 1800s, with the settling of the area, the native vegetation was cleared and converted to agricultural use, grazing, and urban development. Currently up to 99 percent of the Palouse has been converted and only remnants of the Palouse Prairie vegetation remain. The remaining Palouse remnants continue to be eliminated through conversion to cropland, and to a lesser extent, urban and rural residential development. The remnants are primarily located in isolated, rocky, unproductive farmland soils and have been degraded to varying extent by weeds. Because of their isolation, gene flow is restricted, which may contribute to reduced genetic diversity and fitness of the populations.

Big game were relatively scarce in the early 1900s, but agricultural crops and construction of stock ponds created desirable browsing areas which attracted elk and deer. This newly created habitat, in combination with a reduction in predators allowed continued growth of deer and elk populations through the mid-1950s, when populations peaked. The number of homes in the wooded areas and areas on and near Paradise Ridge continues to increase. The continual elimination of trees and shrubs that provide suitable cover for browsing ungulates and general wildlife has degraded the availability of quality habitat in the project area. Abundant suitable habitat is available outside of the project area.

Project Effects. The southern section of the project is considered to have the highest occurrences of ungulates in the project area. It is within the Thorncreek (ID2-04) linkage area, an area identified in an IDFG and ITD wildlife corridor study as a highway segment that intersects a movement corridor for deer, elk, moose and small mammals. However, the linkage area is determined to be low priority compared to other linkage areas. See Wildlife Technical Reports for more detail.

The increased projected traffic volumes through the area could deter wildlife movement and increase wild animal crashes in the area; however, the effects would be mitigated by the wider typical section that would allow for improved sight distance and recovery. While there are still expected to be wildlife collisions over time, the conditions would not cause habitat fragmentation or restrict gene flow that could result in genetically differing subpopulations. See Section 4.8 Vegetation, Fish and Wildlife Effects.

Future Effects. Delphi panelists predicted growth would primarily occur just south of Moscow, west of existing US-95 and along the highway alignments near county road intersections. Habitat loss and fragmentation resulting from the increased development on Paradise Ridge will continue, irrespective of the construction of the highway. Because deer commonly feed on lawns, ornamental plants, and fruit trees, the effects on deer would be minimal as deer thrive near humans. However, moose would likely be negatively affected as complaints by homeowners that moose are eating ornamental shrubs in their yards or tearing down fences often lead to the removal of animals. In the Paradise Ridge area, if removal exceeds replenishment from immigration, moose would become temporary and intermittent residents.

Habitat fragmentation and habitat loss as a result of continued rural residential development on Paradise Ridge would have the greatest effect to elk. The cumulative effects of primarily current and future residential development and fragmentation and loss of habitat could be sufficient to eventually discourage elk use of the Paradise Ridge area. However, more important to the presence of elk in the Paradise Ridge area is maintaining connectivity to larger tracts of suitable habitat to the north and east, and ensuring the suitability of eastern corridor habitat patches. Unlike deer, elk are more sensitive to both temporary and permanent human intrusion into their habitats.

Current agricultural practices are expected to continue through the study area. Cumulative effects may include pesticide drift from adjoining cropland, tracking by farm equipment and RVs which can lead to sedimentation and weed dispersal.

A private loop road for development was recently constructed near Clyde Hill. Increased development on or near Spalding's catchfly plants in this area may adversely affect this federally protected plant. Weed dispersal and infestation may also adversely affect the population.

Cumulative Effects. Changes in land use as a result of the project would largely determine cumulative effects to wildlife.

Many of the wildlife species that would occur in the project area are non-native species and habitat generalist species like raccoon, white-tail deer and a variety of other common species. These species, while important locally, are mainly species already adaptable to habitat modifications, fragmentation and high levels of human use.

Elk and moose are somewhat more specific as to habitat and human use patterns. Regardless, the habitat for elk and moose is limited in quantity and quality and confined to the Paradise Ridge vicinity. Since nearly all of the elk and moose habitat is on Paradise Ridge and eastward, the cumulative effects to their habitat and to their movement is expected to be minimal.

The effects of this project when combined with effects of past, present and future private and public developments in the area could result in cumulative adverse effects to wildlife habitat and movement. It could also result in cumulative effects to Spalding's catchfly. These cumulative effects would include habitat loss, increased mortality, increased habitat fragmentation, and decreased habitat connectivity. However, IDFG expects that overall healthy populations would continue (USFWS 2007). Finally, thousands of acres of public lands with more suitable wildlife habitat are available north and east of Paradise Ridge and just over the Washington State Line. Because of the abundance of suitable habitat and the abundance of species, there is not expected to be substantial cumulative effects to wildlife and the effects would not reduce population viability.

Farmland

Past Effects. The project is located in the rolling Palouse hills of southwestern Latah County. It lies on the eastern margin of the Columbia Plateau where lava flowed into low lying areas leaving higher hills exposed. Over succeeding millennia, streams cut into the bedrock, wind-blown loess was thickly deposited over the surface, and seasonal flooding added alluvial sediments to valley floors (Bush, Provant, and Gill 1998; Othberg 1982; Rember and Bennett 1979). Highly fertile silt loam soils developed in the wind-deposited loess (Barker 1981). These geologic conditions created the basis for the highly productive Palouse soils which are farmed today.

Prior to Euro-American agricultural encroachment, the area was native grasslands and ponderosa pine, Douglas-fir, and other tree species occurring in riparian zones and on some north-facing slopes (Franklin and Dyrness 1988). Today most of the region is farmed, with wheat and legumes being the primary crops. See Section 3.3 Farmlands for a characterization of the farmland in Latah County and the project area.

Project Effects. Direct and indirect effects of the alternatives to farmland are discussed in Section 4.3 Farmland Effects and 6.1 Indirect Effects. The effects include conversion of farmland to other uses, farm fragmentation and creation of smaller less efficiently farmed areas.

Future Effects. Future development south of Moscow and near planned developments in the western corridor could increase property values and encourage conversion of farmland to other uses. However, the Latah County Comprehensive Plan designates much of the area as agricultural. Those areas that are not zoned agricultural are closer to Moscow where growth has already been planned.

Cumulative Effects. The majority of the study area has already been converted to farmland with scattered urban and rural residential areas. Any effects from the project in combination with the projects in the foreseeable future are not expected to result in a cumulative effect to farmland and farming practices. There is abundant farmland available and the comprehensive plan is consistent with maintaining agricultural land uses.

Wetlands and Tributaries

Past Effects. Wetlands and tributaries in the South Fork Palouse River Subbasin have been extensively altered as a result of urban and agricultural development. Approximately 97 percent of the wetlands in the Palouse have been converted to crops, hay, or pasture since 1870 (Black et al. 2003). Less than one percent of the historic grassland wetlands exist today. Most of the remaining small patches of grassland and riparian vegetation disappeared between 1940 and 1989 due to the increase in agricultural activities in the Palouse.

Euro-American missionaries and settlers arrived in the Palouse region converting the land to a privately-owned commodity. Faming removed much of the native vegetation, which led to increased soil erosion and down cutting of tributaries. As a result of the down cut channels, the water table receded, permitting bottom lands and small meadows formerly considered too wet to farm, to be farmed. The introduction of reed canarygrass, which was reportedly planted to reduce stream channel erosion, resulted in an aggressive colonization of reed canarygrass dominated lowlands. The grass invaded wet meadows and provided aggressive competition to native plants. Wetland drainage further reduced the extent of the native camas meadows; during the 1950s, many of the wet depressional areas of the Palouse were drained (Weddell 2001).

Agricultural and urban development resulted in the channelizing of streams, removal of riparian vegetation, increased erosion and sedimentation and other water quality impacts (including high nutrient loading and high water temperatures). This adversely affects fish and wildlife habitat.

Project Effects. The majority of the wetlands affected by the alternatives are rated as Category III, palustrine emergent wetlands. Most are small, disturbed and less diverse than the surrounding environment. Loss and degradation of additional wetlands and streams resulting from the alternatives would negatively affect the wetland system by further degrading water quality, vegetation removal and fill. However, temporary and permanent stormwater best management practices will also be implemented which will help mitigate for water quality effects. 23 CFR 777 and Section 404 of the Clean Water Act require mitigation for affected wetland functions and values which will compensate for wetland and surface water effects. See Chapter 9. Environmental Commitments for how effects to wetlands and tributaries will be mitigated.

Future Trends. Reasonably foreseeable urban and rural residential developments and farming activities could affect wetland and tributary functions and value through wetland fill, sediment deposit, pesticide use, vegetation removal and degradation of wildlife habitat.

Many of the wetlands and tributaries located in the sub basins are in floodplains and subject to strict development restrictions. Overall, there will continue to be conversion of wetlands to increasingly dense levels of urban development or farming in some areas. Wetland functions will be lost in some portions of the area since all mitigation will likely not be accomplished at the site of the impacts. Tributaries that are impacted will likely be relocated or replaced which could result in degradation. Wetlands and tributaries that are determined to be jurisdictional by the Corps of Engineers are subject to the requirements of the CWA, Section 404(b)(1) guidelines and mitigation outlined in the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule, April 10, 2008, [33 CFR 325] and [33 CFR 332, 40 CFR 230].

Cumulative Effects. The loss of wetlands and effects to tributaries resulting from this project, along with the loss of wetlands and degradation of tributaries due to past and future urban and agricultural development, could contribute to cumulative effects. Ongoing agricultural activities, urban and rural residential growth, regardless of the construction of roads would likely cause the greatest effect to wetlands.

Floodplains

Past Effects. Floodplains in Latah County have been degraded primarily as a result of past and ongoing farmland conversion. Road construction, scattered residential and industrial development has also contributed to the degradation. As a result, there has been vegetation removal, sedimentation and erosion and to a lesser extent bank shaping, channeling and other historical riparian modifications.

Project Effects. The W-4 and C-3 alternatives would encroach on the 100-year floodplain. Prior to construction, a detailed floodplain study, floodplain development permit and hydraulic analysis will be completed. The project will be designed to not result in a rise in base flood elevations and all structures in the floodplain will be designed to sufficiently pass hydraulic flow. Therefore the alternatives are not expected to result in a substantial effect. The E-2 Alternative would not encroach on the 100-year floodplain.

Future Effects. Predicted growth in the study area is concentrated south of Moscow and west of existing US-95 so the potential effects to floodplains are primarily associated with the South Fork Palouse River. However, that area has a designated floodway where no development is allowed. Any proposed development within the mapped 100 year floodplain is required to complete a hydraulic analysis and to apply for a floodplain development permit. Therefore it can be expected that any future developments would not substantially adversely affect the floodplains.

Cumulative Effects. Effects to floodplains in Latah County have occurred primarily as a result of past and current agricultural activities, urban and residential development. The proposed effects from the W-4 and C-3 alternatives in combination with the past, present and reasonably foreseeable future effects could contribute to cumulative effects to floodplains. However with strict floodplain development regulations these are not expected to be significant. Since the E-2 Alternative would not encroach on floodplains, there would be no cumulative effects to floodplains as a result of the E-2 Alternative.

Visual Effects

Past Effects. The Palouse was dominated by native grasslands with scattered tree stands before euro American settlement. Beginning in the early 1800s the area has continuously been converted to agricultural land with scattered urban and rural residential development. Currently the agricultural views characterize the area. Palouse remnants, the largest being Paradise Ridge, are also visible. Most of the urban development is concentrated just south of Moscow and is continuing on Paradise Ridge. Existing roadways and the power lines are now the most visible linear features in the area.

Project Effects. The project would cause a high effect to residential viewpoints. The project would result in moderate to low visual effects where the alternatives approach the City of Moscow and the setting is more developed. Effects would be the result of grading, exposed soils, erosion, and unnatural slopes. The addition of a new highway, structures, development and vegetation removal would also potentially affect the visual quality.

Future Effects. The projects in the reasonably foreseeable future would be primarily located south of Moscow and in the western corridor near the universities. The area south of Moscow is already developed and therefore there would not be a substantial effect to visual quality. Continued development on Paradise Ridge would further degrade visual quality for residential viewpoints.

Future transmission lines may potentially follow the alternatives' alignment to facilitate access and to consolidate impacts into a single corridor. This may further contribute to the additional contrast in the existing natural landscape. Direct effects to visual quality resulting from the alternatives are discussed in Section 4.11 Visual Quality Effects.

Cumulative Effects. The project would cause an overall high increase in cumulative impacts to sensitive viewers (residential viewpoints) due to the general lack of current viewshed impacts and the relatively natural setting for the majority of the alternatives, with a moderate to low increase in cumulative impacts where the alternatives approach the City of Moscow and the setting is more developed.

Potential Mitigation Measures for Cumulative Effects

While cumulative effects would result primarily from actions outside of the control of FHWA and ITD, CEQ regulations require that mitigation measures for cumulative effects be identified and discussed in this DEIS. Potential mitigation measures could include the following:

- Development projects will be required to implement mitigation for unavoidable adverse effects to wetlands and waters of the US according to the mitigation rule issued on March 31, 2008, by the EPA and the USACE under Section 404 of the CWA. These regulations are designed to improve the effectiveness of compensatory mitigation to replace lost aquatic resource functions and area, expand public participation in compensatory mitigation decision making, and increase the efficiency and predictability of the mitigation project review process [33 CFR 332] [40 CFR 230].

- Many of the wetlands and streams are within a regulatory floodplain. The implementation of the National Floodplain Insurance Program (NFIP), a program managed by FEMA, should reduce negative effects to floodplains in the future. Through the NFIP, FEMA has established minimum federal standards for floodplain regulation that are administered locally by cities and counties with state oversight by IDWR. Projects constructed within the floodplain must be in compliance with the NFIP.
- ITD will limit access on US-95.
- ITD may plant native plant species near the roadways that would be unappealing to wildlife to minimize wildlife collisions.
- ITD may encourage farming to the edge of the roadway to control weed establishment and dispersal.
- Latah County and the City of Moscow could pass protective ordinances for development on Palouse remnants including Paradise Ridge. They could encourage planting of native plant species throughout the county.
- Latah County and the City of Moscow could pass additional protective ordinances for development on wetlands, streams associated riparian areas, and wildlife habitat areas.
- Latah County and the City of Moscow could encourage installation of watering areas further from the roadway and east of Paradise Ridge.
- Latah County, the City of Moscow or other agencies or conservation organizations could purchase properties, place development restrictions or implement other protective measures to protect Paradise Ridge and identified wildlife movement corridors from development. This could benefit wildlife and have aesthetic benefit.

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7 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

A Public Involvement Plan has been developed to identify key goals, objectives and methods for this process. The public has had numerous opportunities to participate throughout the project including attending open houses, public workshops, breakfast meetings, and/or submitting written comments. A comprehensive list of the public involvement and meeting summaries and notes are available at www.itd.idaho.gov/Projects/D2/. Details of the stakeholder, agency meetings and public comments are on file at the Idaho Transportation Department District 2 office.

A multitude of public involvement activities and tools were employed as listed below:

- Press Releases-38 Press Releases were used to announce public meetings
- Breakfast Meetings-32 Breakfast Meetings were held between 2006 and 2009 to provide a forum for the public to get project updates, learn about the environmental analyses and to ask questions.
- Newsletters-32 Newsletters were distributed between 2004 and 2007. The newsletters included project updates, feature stories, technical information and next steps.
- Project Video-A video was shown during the public scoping meetings in 2005 to introduce the project purpose and need. It was made available on the website and continuously updated on the project website.
- Project Brochure-A project brochure was produced in 2006 and updated in 2010. It provided the public with an overview of the project, including its background, components and the opportunities for public participation.
- Public Meetings were held between 2004 and 2006
  - Public scoping meetings were held November 3 and 4, 2004 to obtain preliminary input from the public regarding problems, solutions and possible alternatives. There were approximately 500 attendees and 300 comments received.
  - Alternative Alignment Workshops were held on January 19 and 20, 2005. These workshops presented a range of possible alternatives and alignments to the public based on previous input and analysis. There were approximately 200 participants and 550 comments received.
  - Public Open House Meeting-An open house was held April 13, 2005. The meeting presented results from the Alternative Alignment Workshops and showed the next steps for the project. There were over 100 attendees and 27 comments received.

  - Public Open House-Additional open house meetings were held-January 18 and 19, 2006. The 11 initial alternatives (No action and 10 Action Alternatives) were presented for public input. ITD's recommendations for alternatives and environmental studies were also presented. There were approximately 600 participants and 695 comments received.
- Community Presentation/workshops and Interviews were held throughout the project development.
- Information Kiosks-Mobile kiosks were placed at two public locations to provide project information and to collect public input between November 2004 and June 2005.
- Community Impact Assessment-This study included three days of completing community member interviews, questionnaires and all day drop-ins, which were compiled in 2006 and updated in 2011. See the Community Impact Technical Reports.
- Fact sheets and handouts were developed when detailed information about a particular issue was needed for distribution to a wide audience or for meetings.
- A Project Website was developed and is maintained for the project duration. It is available at www.itd.idaho.gov/Projects/D2/. The website provides the public with information including progress updates and public involvement activities and allows questions to be raised or comments to be made. The website is updated continuously with milestones, press releases, relevant project materials, reports, and comments collected.
- Property owner meetings and stakeholder interviews were conducted throughout the project development process

Stakeholder interviews were conducted at two stages in the environmental process; during initial scoping and during the development and evaluation of potential alternatives. This enabled ITD and FHWA to gain an in-depth understanding of community issues, values, and constraints regarding the proposed action. During the initial scoping, interviews were conducted with local elected and appointed officials, community transportation and planning officials, and business owners in and near the study area. Stakeholder interviews were conducted during the development and evaluation of potential alternatives. These were documented in the scoping report on file at ITD District 2.

Federal, state, and local agencies and The Nez Perce Tribe representatives that would have an interest in the project participated in the scoping and development of alternatives.

The agencies reviewed and provided input on goals and the purpose and need statement, assessed the transportation needs for the corridor, evaluated and reviewed screening methodologies, and provided input on a range of alternatives. Coordination meetings were held with the agencies to explain the process, define the agencies' roles, and to solicit feedback at various stages in the development of the proposed action.

The Nez Perce Tribe reservation boundaries are located south of the project area and do not occur within the project study area. ITD engaged in government to government consultation throughout the development of the project. The Nez Perce Tribe was provided with copies of all the archeological documents prepared for the project. In addition the ITD District Administrator has been meeting with the Nez Perce Tribe quarterly since 2002 to discuss ITD District 2 projects, which included US-95 Thorncreek Road to Moscow. ITD has an Memorandum of Understanding with SHPO and the Nez Perce Tribe. See Appendix 1. Key Agency Correspondence and Forms. Tribal consultation meetings occurred on the dates listed below:

- December 9, 2004
- September 8, 2005
- December 8, 2005
- March 9, 2006
- November 27, 2006
- March 26, 2007
- February 27, 2008
- July 14, 2008
- November 13, 2008
- March 12, 2009
- June 11, 2009
- December 10, 2009
- February 11, 2010
- April 15, 2010
- October 14, 2010
- August 22, 2011
- March 1, 2012

Public and agency comments received during the public involvement process were used to identify the range of reasonable alternatives and to identify environmental issues to be evaluated. The summaries of the public involvement opportunities are posted on the project website and located at the ITD District 2 office. The major themes of the public concerns included:

- Opposition to western alternative due to noise and visual effects to University Arboretum and effects to historical and residential properties

- Opposition to the eastern alternative due to possible effects to Paradise Ridge.
- Support for the eastern alternative because it is an ecologically sound and cost effective alternative and because it is the safest and shortest alternative.
- Support for the central alternative because it uses less undeveloped land and causes the least effect to the community and wildlife. It is also the closest to current route.
- Support to improve the existing highway because it is the least costly. Passing lanes could be added and Reisenauer Hill could be modified to reduce hazards.
- ITD has not been clear in showing how the eastern and western alternatives would be seen from the city of Moscow.
- Safety and efficiency should be the most important criteria used in selecting an alternative.
- The public needs to attend the upcoming public hearing to voice input and ask questions.
- ITD has not altered any of the three proposed alternatives after extensive public input.
- The Giant Palouse Earthworm was petitioned to the U.S. Department of Interior for listing on the Endangered Species Act; however the earthworm was not listed. The Earthworm's habitat is within the scope of this project and should be included in ITD's environmental analysis.
- How did ITD draw their conclusions from the public meeting comments?
- Did ITD include all comments received from the public in their analysis?
- What is the time frame for a decision? How would the public be notified of the decision?
- How many miles would a five-lane with center turn lane alternative be?
- How many miles would be turned over to the Latah County Highway District?
- Has ITD conducted a storm water analysis?
- Bird watchers on the Palouse submitted a petition with 14 signatures that opposed moving US-95 near Paradise Ridge, specifically opposing the E2 alternative.
- A second petition was submitted by a separate group, with 361 signatures opposing the E-2 Alternative.

There will be a 45-day public comment period during which oral and written testimonies regarding the DEIS and alternatives will be collected. A public hearing will be held during the public comment period.

8 CONSTRUCTION PHASING AND FUNDING

This chapter describes how an Action Alternative, if selected, would be funded and constructed in its entirety. It describes any physical or fiscal constraints associated with implementing an Action Alternative should one be selected.

8.1 Regulatory Framework and Policies

FHWA is required to identify physical and funding limitations associated with constructing an entire project at one time, including phasing and fiscal constraints. NEPA also requires that construction effects be evaluated and disclosed to the public.

8.2 Methodology

The project phasing for this project is consistent with FHWA's objective of analyzing and selecting transportation solutions on a broad enough scale to provide meaningful analysis. Construction phasing was evaluated by considering construction effects of each alternative as applicable. Funding effects were determined by evaluating if the project would need to be phased due to funding or logical construction constraints.

8.3 Construction Phasing

The US-95 Thorncreek Road to Moscow alternatives vary in length from 5.85 miles (E-2) to 6.69 (W-4) which are feasible to construct in one construction package. It is the intent of ITD and FHWA to implement the selected alternative in its entirety in one construction phase. However, this section also describes construction phasing should the funding become available in phases.

The following timeline is anticipated but is contingent on completion and approval of the EIS process and funding availability. Construction for any of the Action Alternatives is anticipated to take two full seasons and would begin in the spring of 2016. See Table 64. Project Milestones.

Sequencing of the construction activities for this project would largely be dependent on the locations of areas requiring large cuts or excavation of native material and areas requiring large amounts of fill material for the roadway.

Table 64. Project Milestones

Phase	Year
ROD issued	2013
Preliminary Design begins	2013
Right-of-way Acquisition begins	2014
Final Design begins	2014
Construction begins	2016
Construction completed	2017

While the construction phasing would be determined based on funding, it is expected that the selected alternative would be constructed in one phase in its entirety. Construction of any of the Action Alternatives would most likely begin with the bridge structure and the areas where the road is realigned. In areas where the existing roadway will be widened, building one side of the highway would allow it to operate during construction.

All of the Action Alternatives would utilize commercial material sources. Staging areas, stockpile sites and waste sites would be determined by the contractor. Waste sites and haul roads may be off-site but would be approved by ITD. All construction activities would be completed according to the ITD Standard Specifications (ITD 2011b) with amendments and would comply with applicable laws, regulations, and the environmental commitments listed in Chapter 9, Environmental Commitments.

All transitions and connections to the existing highways, public and private roadways would be designed to AASHTO standards.

8.4 Project Funding

The estimated total project cost for any of the Action Alternatives would range between $55 and $62 million. Engineering and right-of-way acquisition is estimated at approximately $1.6 million for any of the Action Alternatives. See Table 65. Cost Estimate for Alternatives.

Table 65. Cost Estimate for Alternatives

Alternative	Construction Cost (million dollars)*	Total Project Cost (million dollars)
No Action	minimal	minimal
W-4	52	62
C-3	43	58
E-2	46	55

*Note: The estimated cost includes excavation, rock ballast, plant mix, structures, traffic control and illumination. It excludes engineering, construction engineering, mitigation and right-of-way.

Funding for the US-95 Thorncreek to Moscow project is programmed in the 2011-2015 ITIP with approximately $20,460,391 programmed in FY15 of the FY11-15 ITIP for engineering and construction. These monies originate from High Priority Funding from the Highway Trust Fund which is appropriated through SAFETEA-LU. Approximately $1.6 million is available for the right-of-way acquisition which would cover all of the anticipated right-of-way costs for any of the alternatives. An additional $20 million was programmed for the construction of this project in the draft FY13-17 ITIP. These funds originate from MAP-21 (Moving Ahead for Progress in the 21st Century) NHS funds.

$40 million dollars was requested from Congressional earmarks in 2009. ITD District 2 has also applied for early development grants, and plans to utilize advance construction funds which may be used at the discretion of ITD District 2.

US-95, Thorncreek Rd. to Moscow is an Idaho State priority for the remaining funding required for construction. ITD District 2 would continue to apply advance construction funding using the District budgeted amount. ITD District 2 would continue to include funds for this project in future ITIPs. See Table 66. Project Funding.

Table 66. Project Funding

Funding Source or Planning Description	Funding Program	Amount	Funded Activity
ITIP	TEA 21-National Highway (1998-2005)-Federal Aid funds	$18,425,490	Construction; Widen Genesee to Moscow
ITIP	Safetea-LU (high priority funds) (2005-present)	$1,112,901	Engineering; Widen Lewiston Hill to Moscow
ITIP	Section 129 Funds	$490,000	Construction
ITIP	Transportation Community & Systems Preservation funds (TCSP)	$432,000	Construction
ITIP	MAP-21 National Highway System (NHS) funds	$20,000,000	Construction
Total Allocated		**40,460,391**	
Congressional Earmarking of Federal funds. Request in 2009		$40,000,000	Construction (approval is pending)

Past Funding

Table 67. Federal Highway Funding for the State of Idaho shows the history of funding bill allocations. It demonstrates a consistent increase in funding.

Table 67. Federal Highway Funding for the State of Idaho

Federal Funding Bill	Year	Idaho Allocation
TEA-21	1998	$174,073,000
	1999	$203,441,000
	2000	$208,483,000
	2001	$209,982,000
	2002	$213,867,000
	2003	$217,849,000
SAFETEA-LU	2005	$260,868,000
	2006	$264,199,000
	2007	$278,589,000
	2008	$288,460,000
	2009	$291,823,000

Based on the following evidence it is reasonable to assume that the US-95 Thorncreek Road to Moscow Project would be funded and constructed in its entirety:

- $19,348,000 is designated for project construction in the 2011 to 2015 ITIP
- $1,900,000 is designated for project design in the 2011 to 2015 ITIP.
- $20,000,000 is designated for project construction in the draft 2013-2017 ITIP.
- $1,112,901 is allocated for right-of-way and engineering.
- The cost of right-of-way has been funded in its entirety.
- ITD District 2 applied for $40 million of High Priority funding in 2010.
- The project is the highest priority project for ITD District 2 and the District would continue to apply advance construction funding to the project.
- ITD District 2 would continue to include funds for this project in future ITIPs.
- The history of federal and state funding for highways in Idaho has been increasing with each transportation bill.

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9 ENVIRONMENTAL COMMITMENTS

Environmental commitments include complying with all federal and state laws and regulations and complying with all project related permits and approvals. ITD also maintains a set of standard specifications that state the requirements and standards for construction of ITD projects. The ITD Standard Specifications (ITD 2011b) and its updates would be used to prepare the contract documents for the construction of the alternative if an Action Alternative is selected.

The ITD Standard Specifications requires that a SWPPP be prepared and implemented for this project. This would include Best Management Practices (BMPs) for protection of wetlands, water quality, floodplains, and other sensitive areas. It requires BMPs for erosion and sediment control, spill prevention, revegetation, and environmental construction compliance monitoring.

ITD standard specifications also include provisions for:

- Unanticipated discovery of cultural resources
- Preparation of a revegetation plan
- Preparation of a Traffic Control Plan
- Use of weed free materials and noxious weed control on the construction site
- Maintain access to all roadways during construction
- Handling and disposal of waste
- Approval of material sources, waste sites, haul routes, staging areas and stockpile sites
- Control of fugitive dust

ITD also maintains a set of standard drawings that provide guidelines for highway design elements. These standard drawings incorporate several measures that would minimize visual impacts of the project including:

- Reseeding exposed soils with native grasses.
- Farming to the bottom of the ditch on slopes of 4:1 or flatter.
- Creating rounded slopes and gradually tying slopes back to blend with the existing terrain.
- Balancing cuts and fills which would reduce the overall scaring of the landscape.

Avoidance and measures to minimize adverse effects are described in Chapter 4, Environmental Consequences. Table 68. Mitigation Measures are measures that will be implemented in order to compensate for unavoidable effects resulting from the Action Alternatives.

Table 68. Mitigation Measures

Resource	Mitigation Measure	Mitigation for Alternative		
		W-4	C-3	E-2
Socio-Economic	Maintain access to and from the right-of-way at existing public road connections and existing approaches.	✓	✓	✓
Socio-Economic	Develop a traffic management plan to ensure customer/supplier access and parking for existing businesses during construction.		✓	
Socio-Economic	Coordinate with city, county and university officials to identify scenic turnout locations, including potential signage for the university and Paradise Ridge.	✓	✓	✓
Socio-Economic/ Environmental Justice	Coordinate with the Hidden Village/Benson Mobile Home parks and the Woodland Heights Mobile Home Court residents and owners during final design.		✓	✓
Land Use and Recreation	In accordance with the Latah County Comprehensive Plan the project will provide 6-8 foot shoulders for bicyclists and pedestrians and sidewalks in the curb and gutter section. The project will follow ITD’s Access Management Polity for Type IV access standards which will not allow new approaches on US-95. All alternatives would maintain access to Paradise Ridge and other recreational resources.	✓	✓	✓
Farmland	Limit the accesses or approaches on the new US-95 to limit farmland conversion.	✓	✓	✓
Farmland	ITD will work with adjacent landowners and seek to construct farmable slopes that will quickly be converted back to pre-existing uses.	✓	✓	✓
Floodplains	A No Rise Certification will be completed during the permitting process and before construction. In floodplains without designated floodways, the encroachments will not result in more than a one foot rise in base flood elevations or affect beneficial values of the floodplain. Any effects to the floodplains will be mitigated. In the floodways, a No Rise certification will certify that the project will result in no increase to base flood elevations. If W-4 or C-3 are selected a CLOMR and/or LOMR will be completed and submitted to FEMA.	✓	✓	
Floodplains	Floodplain effects will be minimized using engineering solutions such as steepening slopes and constructing culverts to pass a 25 year flood event.	✓	✓	

Resource	Mitigation Measure	Mitigation for Alternative		
		W-4	C-3	E-2
Floodplains	Any constructed fills or structures in floodplains will be designed to result in no more than a one-foot rise in the base flood elevation.	✓	✓	
Wetlands and Tributaries	Effects to tributaries will be mitigated according to the *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (*33 CFR 325 and 33 CFR 332, 40 CFR 230). Affected stream channels will be replaced. Mitigation will be implemented during the project construction.	✓	✓	✓
Wetlands and Tributaries	Mitigation will be determined by the appropriate Federal agency during the early design process and project permitting process. Mitigation for wetlands and tributary stream channel fills will be implemented in accordance with the Mitigation Rule [33 CFR Parts 325] and [332 and 23 CFR 777] prior to or concurrent with the wetland impacts. The Mitigation Rule emphasizes a watershed approach in selecting compensatory mitigation project locations. A Compensatory Mitigation Plan will be prepared, submitted for approval from the appropriate agencies and will be implemented. It will contain measurable, enforceable ecological performance standards, monitoring, long-term protection and maintenance. The rule applies equivalent standards to permittee-responsible compensatory mitigation, mitigation banks and in-lieu fee mitigation to the maximum extent practicable. There are abundant potential mitigation sites within the Subbasin; however the specific mitigation may include using available credit from the Cow Creek Mitigation Site which has already been constructed for all or partial mitigation, depending on the alternative and the available credit.	✓	✓	✓
Groundwater	ITD will work with Idaho Department of Water Resources to decommission or restrict well construction within 300 feet of the roadway for the selected alternative.	✓	✓	✓
Vegetation, Fish and Wildlife	ITD and IDFG will implement the stipulations in the Memorandum of Understanding (MOU) which is currently being developed.			✓
Vegetation, Fish and Wildlife	If disturbed, existing water features (ponds, tributaries or wetlands) will be maintained or replaced away from the roadway to benefit of numerous wildlife species.	✓	✓	✓
Vegetation, Fish and Wildlife	Construct and install bat boxes at selected sites to provide bat roosts. See the Bat Conservation International website at www.batcon.org or Nongame Wildlife Leaflet No. 11 on bats (Wackenhut and McGraw 1996) for details on building a bat house.			✓

Resource	Mitigation Measure	Mitigation for Alternative		
		W-4	C-3	E-2
Vegetation, Fish and Wildlife	Nuthatch nest boxes will be installed at selected sites near the affected ponderosa pine stands to augment the nesting sites currently available.			✓
Vegetation, Fish and Wildlife	Tree removal will be accomplished during a “work window” provided by the Idaho Department of Fish & Game and the Conservation Data Center designed to minimize effects to resident bird species and to comply with the Migratory Bird Treaty Act and the Eagle Act.	✓	✓	✓
Vegetation, Fish and Wildlife	Overpass structures for county roads and culverts for streams and riparian areas will be constructed with adequate width to provide passage of small terrestrial wildlife. This may include potential retrofitting of existing structures where appropriate.	✓	✓	✓
Vegetation, Fish and Wildlife	Where practicable, culvert designs may include box culverts, bottomless box culverts, and corrugated metal culverts placed at grade or the use of stream simulation designs. This may include potential retrofitting of existing structures where appropriate.	✓	✓	✓
Vegetation, Fish and Wildlife	ITD will develop and implement a weed inventory and control plan during final design to minimize weed establishment adjacent to the roadway and the spread of infestations to adjacent habitats during and after construction. ITD will work with local weed experts during preliminary and final design to develop a project seed mix designed to compete against weed establishment and infestations and to discourage wildlife foraging near the roadway. The seed mix will be used on all appropriate disturbed areas within project limits.	✓	✓	✓
Threatened and Endangered Species	If streams need to be realigned, adequate drainage facilities will be maintained without interruption and prior to construction.	✓	✓	✓
Threatened and Endangered Species	Ground disturbing activities will occur during the dry season to minimize the potential for introducing sediment to ephemeral streams and to control erosion in the Project Area.	✓	✓	✓
Threatened and Endangered Species	Sediment fences will also be installed between areas of disturbance and ephemeral streams, and will be cleaned regularly to maintain function.	✓	✓	✓
Threatened and Endangered Species	Immediately after construction, all disturbed areas adjacent to the highway will be seeded with an approved seed mixture.	✓	✓	✓

Resource	Mitigation Measure	Mitigation for Alternative		
		W-4	C-3	E-2
Threatened and Endangered Species	To minimize the potential for introducing hazardous materials to ephemeral streams in the project area, precautionary measures will be taken to reduce the risk of spills. A spill prevention and contingency plan will be prepared by the construction contractor, approved by ITD prior to construction, and submitted to EPA prior to project implementation.	✓	✓	✓
Threatened and Endangered Species	All staging, fueling, storage, and maintenance areas will be located away from ephemeral streams and adequately buffered from drainage areas by at least 150 feet.	✓	✓	✓
Threatened and Endangered Species	In case of emergency, a hazardous materials spill kit will be kept on site during construction that is appropriate for the solvents involved in operation and maintenance of vehicles and machinery used during the project.	✓	✓	✓
Threatened and Endangered Species	If additional Spalding's catchfly surveys discover the species at any remnant locations that may be affected by selected alternative, ITD will work with the USFWS to establish appropriate vegetation management practices suitable for the location and the species occurrence.	✓	✓	✓
Transportation	ITD will request a Road Closure Maintenance Agreement from the local agency (North Latah Highway District) on any existing roadway that will be abandoned as part of new US-95 alignment. The process will include negotiations with the local agency to bring the old US-95 up to local standards. This would not include widening but may involve some paving. Connectors will be constructed at each end of the road closure for access. Once the agreement has been signed all documents pertaining to that section of roadway (right-of-way plans and descriptions, roadway plans and agreements) will be turned over to the local agency.	✓	✓	✓
Visual Quality	ITD will implement measures to help blend highly visible roadway features with the setting through measures such as use of native grass species, balancing cut and fills, and painting metal beams to blend with the surrounding environment.	✓	✓	✓
Hazardous Materials	A Phase II Hazardous Materials Study will be completed during preliminary and final design to identify sites requiring cleanup and special handling and disposal of hazardous materials. If there are sites requiring hazardous materials cleanup, that work will be accomplished by a qualified contractor specializing in hazardous materials cleanup before or during construction	✓	✓	✓

Resource	Mitigation Measure	Mitigation for Alternative		
		W-4	C-3	E-2
Hazardous Materials	Buildings constructed before 1978 will be tested for asbestos and lead based paint. If determined to be present it will be demolished and waste handled according to applicable laws and regulations.	✓	✓	✓
Cultural Resources/ Section 4(f)	If the W-4 Alternative is selected, a determination of adverse effect and Memorandum of Agreement (MOA) will be prepared and implemented to comply with Section 106 of the NHPA. The MOA will be developed in coordination with the SHPO, the ACHP, ITD and FHWA. It will outline agreed upon stipulations to mitigate effects to the Deesten/Davis farmstead.	✓		

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INDEX

APPENDIX 1. KEY AGENCY CORRESPONDENCE AND FORMS

- ITD 1502 Forms
- SHPO Concurrence Letters
- Tribal MOU
- Tribal Correspondence
- USFWS Concurrence Letters
- NRCS-CSA Farmland Conversion Forms
- EPA Scoping Letter
- IDFG Correspondence

ITD 1502 (Rev. 4-06)
itd.idaho.gov

Determination Of Significance And Effect

Idaho Transportation Department – State or Tribal Historic Preservation Office

Key Number	Project Number	Project Title
9294	DHP-NH-4110(156)	US-95, Thorn Creek to Moscow, Stage 1 (Alignment W-4)

District	County	Township/Range/Section
2	Latah	refer to AHSR

	Field Notes
Clearance Authorized Without Survey ☐ PA ☐ ER ☐ Review	Archaeological and Historical Services (AHS)

Determination of Eligibility

	Site Numbers	Comments
☐ No Sites		
☒ Not Eligible	Temp # US95-21	Clyde & Bond Property #2
☒ Eligible	Temp # US95-22	Deesten/Davis Farmstead

Determination of Effect

	Rationale	Sites/Comments
☐ No Historic Properties Affected	☐ They are outside the project area	
	☐ They are outside impact zones	
	☐ Final project plans will avoid them	
	☐ NR character will not be changed	

☐ No Adverse Effect to Historic Properties — Sites will be affected (See Comments section below or attached explanation)

☒ Adverse Effect to Historic Properties — Sites will be affected: **Deeston/Davis Farm (Temp Site US95-22)**

Comments: **ITD District 2 proposes to improve US-95 from approximately MP 336.5 near Thorn Creek Road to MP 343.8 just south of Moscow. Plans call for realignment of the northern portion of the 7.5 mile long highway segment and widening of the southern portion. ITD District 2 has proposed three alignment options: W-4, C-3, and E-2. This Determination of Eligibility and Effect applies only to Alignment W-4.**
An intensive-complete cultural resources survey has been completed and cultural resources identified. Two sites, the Deeston/Davis Farm (Temp # US95-22) and Clyde & Bond #2 (Temp # US95-21) properties, are located within or abutting the project APE of alignment W-4. The Clyde & Bond Property #2 has been determined Not Eligible for the NRHP. The Deeston/Davis Farmstead has been determined Eligible for the NRHP and proposed project actions will result in an Adverse Effect to this historic property. If alternative W-4 is selected ITD District 2 will mitigate for the adverse effect of their actions to the Deeston/Davis Farmstead following consultation with the Idaho SHPO. With compliance to that stipulation it is recommended that this project be allowed to proceed as planned.

☐ Project will be monitored during construction due to the potential for cultural resources

Transportation Archeologist's Signature	Date
Marc Münch	December 5, 2006

SHPO or THPO 106 Comment: I have reviewed the documentation and recommendations provided by ITD and

☑ I agree with the above determination of eligibility and effect and with the conditions of compliance.

☐ I agree with the above determinations of eligibility and effect given stipulations explained below or in the attached letter.

☐ I disagree with the above determinations of eligibility and effect as explained below or in the attached letter.

State or Tribal Historic Preservation Officer's Signature	Date
Glenda L. King	1/2/07

ITD 1502 (Rev. 4-06)
itd.idaho.gov

Determination Of Significance And Effect

Idaho Transportation Department – State or Tribal Historic Preservation Office

Key Number	Project Number	Project Title
9294	DHP-NH-4110(156)	US-95, Thorn Creek to Moscow, Stage 1 (Alignment W-4)

District	County	Township/Range/Section
2	Latah	refer to AHSR

	Field Notes
Clearance Authorized Without Survey ☐ PA ☐ ER ☐ Review	Archaeological and Historical Services (AHS)

SHPO or THPO 4(f) *De minimis* Comment (applies only when a determination of effect results in a *No Historic Properties Affected* or *No Adverse Effect* determination under Section 106):

De minimis impacts related to historic sites are defined as the determination of either "no adverse effect" or "no historic properties affected" in compliance with Section 106 of the National Historic Preservation Act (NHPA).

☑ I understand that the FHWA Division Administrator or FTA Regional Administrator may make a *de minimis* impact finding for one or more Section 4(f) resources based on Section 106 findings in this document.

Site Temp # US95-22

State or Tribal Historic Preservation Officer's Signature	Date
Glenda L. King	1/2/07

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JAN 08 2007

DIV. OF HIGHWAYS
LEWISTON, IDAHO

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Determination Of Significance And Effect

Idaho Transportation Department – State or Tribal Historic Preservation Office

Key Number	Project Number	Project Title
9294	DHP-NH-4110(156)	US-95, Thorn Creek to Moscow, Stage 1 (Alignment C-3)

District	County	Township/Range/Section
2	Latah	refer to AHSR

	Field Notes
Clearance Authorized Without Survey ☐ PA ☐ ER ☐ Review	Archaeological and Historical Services (AHS)

Determination of Eligibility

	Site Numbers	Comments
☐ No Sites		
☒ Not Eligible	57-13693; 57-13694; 57-13695; 57-13697; 57-13696; 57-13698; 10LT245; 57-13687; 57-13689; 10LT244; 57-13688	Benson House; Clyde Farm; Geffre House; Renfrew Farm; Sinclair Residence; Deeston Farm; North-South Hwy.; Carpenter Farm; Reisenauer Farm; Paulson Memorial; Jensen Farm
☒ Eligible	57-13692	Snow Farm (house & garage)

Determination of Effect

	Rationale	Sites/Comments
☒ No Historic Properties Affected	☐ They are outside the project area	
	☐ They are outside impact zones	
	☐ Final project plans will avoid them	
	☒ NR character will not be changed	57-13692 Snow Farm (house & garage)
☐ No Adverse Effect to Historic Properties	Sites will be affected (See Comments section below or attached explanation)	
☐ Adverse Effect to Historic Properties	Sites will be affected:	

Comments: **ITD District 2 proposes to improve US-95 from approximately MP 336.5 near Thorn Creek Road to MP 343.8 just south of Moscow in Latah County. Plans call for realignment of the northern portion of this highway segment and widening of the southern portion. ITD District 2 proposes three alignment options: W-4, C-3, and E-2. This Determination of Eligibility and Effect applies only to alignment C-3.**

An intensive-complete cultural resources survey of alignment C-3 has been completed and cultural resources identified. The house and garage at the Snow Farm (57-13692), was determined Eligible for the NRHP. However, proposed project actions will result in No Effect to the Snow Farm.

Nine other properties were recorded and determined Not Eligible for the NRHP. Two historic sites, North-South Hwy (10LT245) and the Paulson Memorial (10LT244) were previously determined Not Eligible by the SHPO in 2001. One previously eligible property, the Jensen Farm (57-13688), was re-evaluated in 2006 and determined to be Not Eligible based on an ITD Architectural Historian site visit and subsequent SHPO consultation.

☐ Project will be monitored during construction due to the potential for cultural resources

Transportation Archeologist's Signature	Date
Marc Münch	December 5, 2006

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itd.idaho.gov

Determination Of Significance And Effect

Idaho Transportation Department – State or Tribal Historic Preservation Office

Key Number	Project Number	Project Title
9294	DHP-NH-4110(156)	US-95, Thorn Creek to Moscow, Stage 1 (Alignment C-3)

District	County	Township/Range/Section
2	Latah	refer to AHSR

Clearance Authorized Without Survey	Field Notes
☐ PA ☐ ER ☐ Review	Archaeological and Historical Services (AHS)

SHPO or THPO 106 Comment: I have reviewed the documentation and recommendations provided by ITD and

☑ I agree with the above determination of eligibility and effect and with the conditions of compliance.

☐ I agree with the above determinations of eligibility and effect given stipulations explained below or in the attached letter.

☐ I disagree with the above determinations of eligibility and effect as explained below or in the attached letter.

State or Tribal Historic Preservation Officer's Signature	Date
Glenda L. King	1/2/07

RECEIVED
JAN 08 2007
DIV. OF HIGHWAYS
LEWISTON, IDAHO

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ITD 1502 (Rev. 4-06)
itd.idaho.gov

Determination Of Significance And Effect

Idaho Transportation Department – State or Tribal Historic Preservation Office

Key Number	Project Number	Project Title
9294	DHP-NH-4110(156)	US-95, Thorn Creek to Moscow, Stage 1 (Alignment E-2)

District	County	Township/Range/Section
2	Latah	refer to AHSR

Clearance Authorized Without Survey ☐ PA ☐ ER ☐ Review	Field Notes: Archaeological and Historical Services (AHS)

Determination of Eligibility

	Site Numbers	Comments
☐ No Sites		
☒ Not Eligible	Temp # US95-11; Temp # US95-1; 10LT242;	Benson Property; Fleiger Property; Trash Scatter #3
☐ Eligible		

Determination of Effect

	Rationale	Sites/Comments
☐ No Historic Properties Affected	☐ They are outside the project area	
	☐ They are outside impact zones	
	☐ Final project plans will avoid them	
	☐ NR character will not be changed	
☐ No Adverse Effect to Historic Properties	Sites will be affected (See Comments section below or attached explanation)	
☐ Adverse Effect to Historic Properties	Sites will be affected:	

Comments: **ITD District 2 proposes to improve US-95 from approximately MP 336.5 near Thorn Creek Road to MP 343.8 south of Moscow. Plans call for realignment of the northern portion of the 7.5 mile long highway segment and widening of the southern portion. ITD District 2 has proposed three alignment options: W-4, C-3, and E-2. This Determination of Eligibility and Effect applies only to alignment E-2.**
An intensive-complete cultural resources survey of alignment E-2 has been completed and cultural resources identified. Two historic properties, the Benson Property and the Fleiger Property, were recorded and determined Not Eligible for the NRHP. One historic feature, 10LT242, was previously determined Not Eligible by the SHPO in 2001. If alignment E-2 is selected the proposed project actions will result in No Effect to historic properties. In the event that cultural resources are encountered during construction, work will cease at that location and ITD HQ Cultural Resources staff will be notified immediately.

☐ Project will be monitored during construction due to the potential for cultural resources

Highway Archeologist's Signature	Date
[signature]	December 5, 2006

SHPO or THPO 106 Comment: I have reviewed the documentation and recommendations provided by ITD and

☑ I agree with the above determination of eligibility and effect and with the conditions of compliance.

☐ I agree with the above determinations of eligibility and effect given stipulations explained below or in the attached letter.

☐ I disagree with the above determinations of eligibility and effect as explained below or in the attached letter.

State or Tribal Historic Preservation Officer's Signature	Date
Glenda L. King	12/29/06

IDAHO TRANSPORTATION DEPARTMENT
P.O. Box 7129
Boise ID 83707-1129

(208) 334-8000
itd.idaho.gov

December 20, 2011

Mr. Travis Pitkin
Compliance Archaeologist
Idaho State Historical Society
State Historic Preservation Office
Statehouse Mail

RE: Project No.: DHP-NH-4110(156), Key No.: 9294
US-95, Thorn Creek to Moscow, Stage 1

Dear Travis,

On December 5, 2006, the Idaho Transportation Department (ITD) submitted an Archaeological and Historic Survey Report (AHSR) for the above captioned project to the Idaho State Historic Preservation Office (SHPO) along with three Determination of Significance and Effect (ITD Form 1502) documents – one for each proposed potential project alignment. The 1502s were signed by SHPO on December 29, 2006 and concurred with ITD's finding of No Effect for alignments C-3 and E-2, and Adverse Effect for alignment W-4. At the time, ITD noted that no final alignment had been chosen for the project and therefore it was decided to wait for that decision prior to drafting and implementing a Memorandum of Agreement (MOA) for the W-4 alternative.

As the 2006 AHSR only recorded historic properties constructed in 1959 or before, it was recently decided to update the survey by recording all properties constructed between 1960 and 1970. Field work completed this summer resulted in the recordation of three (3) additional sites that fall within that date range – see attached. None were determined Eligible for listing in the National Register of Historic Places. During the same investigation, the consultant mapped, photographed, and inventoried all properties within or adjacent to the three alignment corridors constructed after 1970 – see attached.

A final alignment has yet to be identified for the project. Once chosen, that alignment will be reported to SHPO and the completion of the Section 106 process can take place. In the meantime, ITD requests the review of the attached site recordings and a letter acknowledging SHPO's concurrence with ITD's determination of National Register eligibility.

If you have any questions, please feel free to contact me at dan.everhart@itd.idaho.gov or 334-8479.

Thank you,

Dan Everhart

Dan Everhart
ITD Architectural Historian

Enclosure

www.history.idaho.gov

Idaho • State Historical SOCIETY

March 8, 2012

C.L. "Butch" Otter
Governor of Idaho

Janet Gallimore
Executive Director

Administration
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2682
Fax: (208) 334-2774

Membership and Fund Development
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 514-2310
Fax: (208) 334-2774

Historical Museum and Education Programs
610 North Julia Davis Drive
Boise, Idaho 83702-7695
Office: (208) 334-2120
Fax: (208) 334-4059

State Historic Preservation Office and Historic Sites Archeological Survey of Idaho
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3861
Fax: (208) 334-2775

Statewide Sites:
- Franklin Historic Site
- Pierce Courthouse
- Rock Creek Station and
- Stricker Homesite

Old Penitentiary
2445 Old Penitentiary Road
Boise, Idaho 83712-8254
Office: (208) 334-2844
Fax: (208) 334-3225

Idaho State Archives
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2620
Fax: (208) 334-2626

North Idaho Office
112 West 4th Street, Suite #7
Moscow, Idaho 83843
Office: (208) 882-1540
Fax: (208) 882-1763

Dan Everhart
Architectural Historian
Idaho Transportation Department
Statehouse Mail

RE: Goodman Oil (HR 02); US-95, Thorn Creek to Moscow, Stage 1; DHP-NH-4110(156), Key 9294.

Dear Dan,

This letter is in response to your email requesting further comment about our recent determination of eligibility for the Goodman Oil Company gas station above. I have discussed our eligibility assessment for the property with our architectural historians and we offer the following in support of our determination.

In essence, the building meets Criterion C as an excellent example of "mid-century modern" architectural design – the octagonal/round form, the large glass exposure, flat roof, metal components, and cinderblock walls all are distinctive characteristics of the type, period, and method of construction of the genre. Furthermore, although a comprehensive survey of gas stations has not yet been conducted in Idaho, it is clear that this example appears to be a rare survivor of the property type (no other similar examples are known or recorded in the state inventory).

We appreciate your cooperation. If you have any further questions, please contact us.

Sincerely,

Travis Pitkin, M.S.
Archaeologist

Idaho • State Historical Society

January 23, 2012

C.L. "Butch" Otter
Governor of Idaho

Janet Gallimore
Executive Director

Administration
2205 Old Penitentiary Road
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610 North Julia Davis Drive
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State Historic Preservation Office and Historic Sites Archeological Survey of Idaho
210 Main Street
Boise, Idaho 83702-7264
Office: (208) 334-3861
Fax: (208) 334-2775

Statewide Sites:
- Franklin Historic Site
- Pierce Courthouse
- Rock Creek Station and
- Stricker Homesite

Old Penitentiary
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Idaho State Archives
2205 Old Penitentiary Road
Boise, Idaho 83712-8250
Office: (208) 334-2620
Fax: (208) 334-2626

North Idaho Office
112 West 4th Street, Suite #7
Moscow, Idaho 83843
Office: (208) 882-1540
Fax: (208) 882-1763

Dan Everhart
Architectural Historian
Idaho Transportation Department
Statehouse Mail

RE: US-95, Thorn Creek to Moscow, Stage 1
DHP-NH-4110(156), key 9294

Dear Dan,

Thank you for sending additional information regarding the project referenced above. Three additional properties were recorded that were not addressed in the previous 2006 cultural resources survey report.

We agree the Ziegler House (HR 01) and the 2305 S. Main St. property (HR 16) are both Not Eligible. However, we do feel the 1963 commercial structure on the Goodman Oil Company property (HR 02) is National Register Eligible under Criterion C (Consideration g.). We feel the structure is of exceptional significance exhibiting a very rare design for Idaho.

The Goodman Oil Company property (HR 02) appears to be situated near the northern confluence of the C3, E2, and W4 alignment corridors. The location of this property may require a change in project finding for C3 or E2 alternates. The W4 alternate has previously been determined to adversely affect historic properties. We understand a final alignment has not yet been identified, and look forward to receiving additional information regarding project actions when an alignment is chosen.

We appreciate your cooperation. If you should have any questions regarding these comments please feel free to contact me at 208-334-3847 or travis.pitkin@ishs.idaho.gov.

Sincerely,

Travis Pitkin, M.S.
Archaeologist

January 28, 2002

Mr. Rob Roy Smith
Staff Attorney/Policy Analyst
Nez Perce Tribal Executive Committee
P.O. Box 305
Lapwai, ID 83540-0305

Re: Nez Perce Tribe/ITD MOU

Dear Mr. Smith:

Enclosed is the fully executed original Memorandum of Understanding between the Nez Perce Tribe and the Idaho Transportation Department for your records. We have retained copies of the MOU for our Lewiston and Boise offices.

Sincerely,

ORIGINAL SIGNED BY:

JOAN THOMPSON
District Business Manager

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Enclosure

bcc: LEGAL w/enc.
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File w/enc.

Nez Perce

TRIBAL EXECUTIVE COMMITTEE
Office of Legal Counsel
P.O. BOX 305 • LAPWAI, IDAHO 83540-0305 • (208) 843-7355
FAX (208) 843-7377

January 15, 2002

Tim Thomas, Esq.
Idaho Transportation Legal Department
PO Box 7129
Boise, Idaho 83707

RE: Nez Perce Tribe/ ITD MOU

Dear Tim:

Enclosed is a signed original copy of the *Memorandum of Understanding Between the Nez Perce Tribe and the Idaho Transportation Department*. As per our conversation, it is my understanding that you will have the appropriate individuals sign and subsequently distribute copies of the MOU.

It has been a pleasure working with both you and Mr. Bywater in finalizing this agreement. The Tribe looks forward to continuing our positive working relationship with the Idaho Transportation Department.

Sincerely yours,

Rob Roy Smith
Staff Attorney/ Policy Analyst

MEMORANDUM OF UNDERSTANDING

between

THE NEZ PERCE TRIBE

and

THE IDAHO DEPARTMENT OF TRANSPORTATION

for

COORDINATION AND CONSULTATION ON TRANSPORTATION PROJECTS AND RESOURCE MANAGEMENT ISSUES

This Memorandum of Understanding ("MOU") is made between the Nez Perce Tribe ("TRIBE"), a federally recognized sovereign Indian Tribe, and the Idaho Department of Transportation ("ITD").

ARTICLE I. GOVERNMENT-TO-GOVERNMENT CONSULTATION

A. Purpose.

The purpose of this Agreement is to establish a procedure under which the TRIBE and the ITD will consult concerning construction, repair or maintenance projects ("projects") undertaken by the ITD within the Nez Perce Reservation, ceded territories and traditional use areas (collectively "Reservation"). For the purposes of this MOU, consultation is a multi-step process involving the TRIBE and ITD, leading to informed decision-making that adequately addresses the legitimate rights and interests of the TRIBE and the interests, needs and obligations of ITD. A first step towards meaningful consultation includes open, two-way information sharing early in the decision-making process and the opportunity for technical, legal and policy review and input. Consultation incorporates such input into the decision-making process in a manner that addresses the legitimate rights and interests of both parties.

B. Responsible officials.

1. The District Engineer for District 2 of the ITD shall be the responsible official for the purpose of consulting with the TRIBE on a government-to-government level for ITD projects within the Reservation. A representative from the State Transportation Board may attend such consultations when available.

2. The Chairman of the Nez Perce Tribal Executive Committee or his designee shall be the responsible Tribal government official for the purpose of consulting with ITD on a government-to-government level with respect to ITD projects.

3. The District Engineer shall designate ITD representatives responsible for maintaining contact and free flow of information in a continuing working relationship with the Tribe.

4. The Chairman of the Nez Perce Tribal Executive Committee shall designate the Tribal representative and key staff responsible for maintaining a continuing working relationship with ITD.

C. Consultation between responsible officials.

1. The parties shall initiate consultation at least once every three (3) months: (a) to discuss all proposed and ongoing projects within the Reservation, (b) to identify potential effects on tribal interests, and (c) to resolve other transportation or resource management issues of concern to either party.

2 Either party may initiate consultation for the purposes of entering into additional cooperative agreements with respect to specific projects.

3. The District Engineer shall initiate consultation when significant changes to projects that the Tribe has already commented on are being considered.

4. Consultation for other purposes may be initiated by either party.

ARTICLE II. PROJECT PLANNING AND COORDINATION

A. ITD responsibilities.

1. The District Engineer or his designee shall enter into discussions with the TRIBE to determine the level of coordination appropriate for specific projects within the Reservation at the commencement of planning with respect to the project.

2. Solicit comments from the TRIBE for projects within the Reservation.

3. Provide the TRIBE with a reasonable opportunity to review and comment on all projects proposed within the Reservation.

4. Work with the TRIBE on the proposed project before the project is opened to comments from the general public to alleviate tribal concerns prior to the comment phase.

5. Solicit comments from the TRIBE to help identify any potential impacts of ITD projects on natural resources, cultural resources or sacred sites, as well to help develop any plans to avoid or mitigate such adverse impacts; and incorporate the comments of the Tribe to the fullest extent practicable as they relate to the protection or mitigation of adverse impacts to such resources and sites.

B. TRIBE responsibilities.

1. Identify tribal representatives to work on an on-going basis with ITD representatives concerning ITD projects within the Reservation and distribute ITD project announcements to appropriate tribal staff.

2. Provide review comments to the ITD within 30 calendar days from the date of receipt of the notice, as otherwise specified in the notice, or as agreed.

3. Assist in resolving conflicts or potential effects identified during the tribal review of the proposal notices.

4. Inform the ITD of any activities on tribal lands that could affect or influence initiation or implementation of an ITD project.

5. Identify projects of mutual interest and coordinate with other entities to seek cooperative agreements.

C. Mutual responsibilities.

1. Set the date, time, and place for the quarterly consultation meeting, and other consultations as mutually agreed to.

2. At least one week prior to the quarterly consultation meeting, prepare an agenda identifying specific questions, issues of concern, and ongoing or proposed cooperative programs to be addressed.

3. Where appropriate, prepare and submit for review prior to the meeting draft cooperative agreements for discussion, negotiation and signature at the meeting.

4. Diligently work toward reaching mutually agreeable solutions in cases of conflict.

5. Work cooperatively to find creative solutions and secure tribal participation in projects, where appropriate.

ARTICLE III. GENERAL TERMS AND CONDITIONS

A. Direct contacts between the ITD and the TRIBE are in no way limited by this MOU. Such contacts are essential to promote more effective communication, coordination and consultation. The Parties recognize that each party reserves all rights, powers, and remedies now or hereafter existing in law or equity, by statute, treaty or otherwise. Nothing in this MOU shall be construed as a waiver of sovereign immunity of the TRIBE or the State of Idaho. By entering into this MOU, the Parties reserve, and do not waive, any jurisdictional or other claims authorized by law. This MOU is intended solely for the purpose of facilitating intergovernmental cooperation between the Parties and creates no rights in third parties or the right to judicial review.

B. Failure of the TRIBE to respond to any notification above shall in no way be considered a waiver or abandonment of any treaty or treaty-related right with respect to the activity or project referred to in the notification.

C. Amendments, supplements or revisions to this MOU may be proposed by any Party to the agreement and shall become effective upon formal approval by both Parties.

D. This agreement will become effective on the date of the latest signature as evidenced below.

E. Either party may terminate this agreement by providing written notice to the other party. The agreement will terminate thirty (30) days after a party receives such written notice.

Nez Perce Tribe
By:

Samuel N. Penney

Samuel N. Penney
Chairman

1-14-02
(date)

Arthur M. Taylor, Jr.

Arthur M. Taylor, Jr.
Secretary

01-14-02
(date)

Idaho Department of Transportation

By:

Jim Carpenter
District Engineer, ITD District Two

1/23/02
(date)

Approved as to form:

Stephen A. Bywater
Deputy Attorney General
Idaho Transportation Department

NEZ PERCE TRIBE CONTACT LIST

Issue	Name	Telephone
Cultural Resources	Kevin Cannell	(208) 843-7313
Water Quality	Bobby Hills	(208) 843-7368
Noxious Weeds/Land Ownership	Jack Bell	(208) 843-7392
Transportation Planning	Della Cree	(208) 843-7324
Fishery Habitat/Restoration	Emmit Taylor	(208) 843-7144
Forestry Issues	John DeGroot	(208) 843-7328
Wildlife	Keith Lawrence	(208) 843-7372
General Issues	Rob Roy Smith	(208) 843-7377

Zach Funkhouser

File:DHP-NH-4110(156)

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
IDAHO DIVISION
3050 LAKEHARBOR LANE, SUITE 126
BOISE, IDAHO 83703-6217
208-334-1843
Idaho.FHWA@fhwa.dot.gov

RECEIVED JUL 19 2004 DIV. OF HIGHWAYS LEWISTON, IDAHO

Idaho Division Routing	
	DIV ADMIN
	ASST DIV ADMIN
	TRANSP ENG
	ENV MGR
	BR/SAFETY ENG
	FINAN MGR
	FINAN SPEC
	FINAN ASST
	STAFF ASST
	SUPP SERV CLK
	COMP SPEC
	FIELD OPS ENG
	OPS ENG 1
	OPS ENG 2
	OPS ENG 3
	OPS ENG 4
	PDP
	FILES

July 14, 2004

RECEIVED
JUL 15 2004
ID. TRANS. DEPT.

Reply To: HFO-ID.1

Mr. Samuel Penney
Tribal Chair
Nez Perce Tribe
PO Box 365
Lapwai, ID 83540

RE: Project DHP-NH-4110(156), Key #9294; US-95, Thorn Creek Road to Moscow

Dear Mr. Penney:

The above referenced project is being developed to improve the level of service and safety of US-95 from MP 337.2 at Thorn Creek Road, north of Genesee, to MP 344.0 south of Moscow in Latah County. The Idaho Transportation Department (ITD) District 2 Office in Lewiston is developing the project in cooperation with the Federal Highway Administration (FHWA). The project location is shown on the enclosed maps.

The purpose of this letter is to initiate a government-to-government relationship with the Nez Perce Tribe and to gain your input regarding this project. The FHWA's guidance on consultation with Tribal Governments on Federal-aid projects is based on the November 6, 2000 Executive Order: Consultation and Coordination with Indian Tribal Governments.

We are aware that Mr. Jim Carpenter, ITD District 2 Engineer, meets with you on a quarterly basis to brief you on projects that may be of interest to you. We would be pleased to have an FHWA representative accompany Mr. Carpenter to a forthcoming meeting to formalize our government-to-government relationship with the Tribe.

ITD District 2 is beginning the development of an Environmental Impact Statement (EIS) for this project. An archeological and historical inventory of the project area will be conducted. Under the Federal regulations of Section 106, Section 4(f) and NEPA, consideration of the possible effect of the project on

Native American Traditional Cultural Properties (TCPs) and Sacred Sites that are within or in close proximity to the project area is required. We are very interested in input from the Tribe regarding any concerns for TCPs or Sacred Sites in this project area.

For day-to-day activities and normal consultations with the Tribe, FHWA relies on ITD District 2 in Lewiston. ITD is responsible for working with the Tribe to develop information on Tribal project concerns. Mr. Jim Carpenter, ITD District 2 Engineer, may be contacted at (208) 799-4200.

Since FHWA is ultimately responsible for ensuring compliance with Federal law, including Tribal coordination, please contact Edwin Johnson, FHWA Operations Engineer, at (208) 334-9180, ext. 116, if you have any specific questions or concerns, and if you would like to meet with an FHWA representative at your quarterly meeting with ITD District 2. Please furnish us the name and telephone number of the Tribe's designated contact person for this project.

Thank you for your attention to this matter.

Sincerely,

Renee Sigel

Renee Sigel
Assistant Division Administrator

Enclosure

Hard Copy cc: Mr. Jim Carpenter, ITD District 2 Engineer,
Mr. Dennis Clark, ITD Environmental Program Manager,
Mr. Zach Funkhouser, District 2 Sr. Environmental Planner

ebj(let)-Project DHP-NH-4110(156), Key #9294.doc

File

February 23, 2012

Mr. Brooklyn Baptiste, Chair
Nez Perce Tribe Executive Committee
P.O. Box 305
Lapwai, ID 83540

Re: March 1, 2012, Quarterly MOU Meeting
Between the Nez Perce Tribe (NPT) and
The Idaho Transportation Department (ITD)

Dear Chair Baptiste:

In accordance with the provisions of our MOU, I am forwarding you the items that we would like to have placed on the agenda:

Federal and State Funded Projects/
Government to Government Coordination

Projects under contract on the Reservation:

	Award or Bid Opening	Prime Contractor
• US-95, S. of Cottonwood to S. of Ferdinand	10/18/11	Poe Ashalt Paving
• US-95 Lapwai Cr. Bridges	04/05/11	Wadsworth Brothers, Inc.
• SH-162, Nezperce to Four Corners	08/30/11	Knife River Construction
• US-95, Spaulding Br. Rehab	09/26/11	Penhall Construction
• SH-162, Four Corners to MP 13.1	11/08/11	Knife River Construction
• US-12 Orofino to Greer	01/10/12	Valley Paving, Inc.
• SH- 162, Red Rock Rd to Kamiah	03/06/12	TBD

Projects under construction near the Reservation:

	Award	Prime Contractor
• US-95, FY12 Rockfall Mitigation	08/02/11	Midwest Rockfall, Inc.

Continued...

Projects being developed within the Reservation:

	Complete Design
• US-95, End of Concrete to Ferdinand	2016
• SH-162 MP 13 to Redrock Road	2013
• US-95, Turn bays (Division & Old SH-7)	2013
• SH-7, Gilbert Grade	2014
• SH- 64, Kamiah Grade	2014
• US-12 Greer to Kamiah, Rockfall	2014
• SH-11, Greer Bridge Painting	2013
• US-95, Spaulding Bridge, Scour Mitigation	2014
• US-95 Concrete Slab Repair	2014

Projects being developed near the Reservation:

• MP 81 to Syringa, US-12	2013
• Thorn Cr. Rd to Moscow, US-95	2016
• Crooked Fork River Bridge, US-12	2013

Discussion Items:

- Programmatic Agreement on Cultural Clearances
- Left Turn bay Study
- Clearwater River Casino Interchange
- Joint Rest Area in Winchester

If you have any questions on these subjects or would like us to be prepared to address additional topics, please call me at 799-5090. We look forward to another productive and informative meeting with the NPT.

Sincerely,

ORIGINAL SIGNED BY:

JAMES F. CARPENTER, P.E.
District Engineer

JFC:kr/Z:\ADMIN\OM\WRDFILES\Office\nez perce tribe 2-23-12.docx

cc: Ms. Jan Vassar, Idaho Transportation Board
Ms. Rachel Edwards, Nez Perce Tribe

bcc: DE2 DEM2 PDE2 DTE2 RE2 A RE2 B EPS TPS2
SHA (Münch)

file

December 19, 2006

Mr. Kevin Cannell, THPO
Nez Perce Tribe
P.O. Box 365
Lapwai, ID 83540

Re: Project No. DHP-NH-4110(156); Key No. 9294
Throncreek Road to Moscow
Archeological and Historic Survey Report

Dear Mr. Cannell:

As per your request, enclosed is the referenced report for the Idaho Transportation Department's Thorncreek Road to Moscow project.

If you have questions or concerns regarding this report, please feel free to contact me at 799-5090.

Sincerely,

ORIGINAL SIGNED BY:

ZACHARY A. FUNKHOUSER
Environmenal Planner Senior

ZAF:ss/z:\Admin\OM\WRDFILES\ADM\cannell9294hist.survey.doc
Enclosure

bcc: ENV (CLARK) DE2 PDE2 EPS

CenturyLink Webmail anderenv@q.con

+ Font Size -

FW: Thorncreek to Moscow and Silene

From : Shawn Smith <Shawn.Smith@itd.idaho.gov> Thu, Apr 12, 2012 10:06 PM

Subject : FW: Thorncreek to Moscow and Silene

To : Michelle Anderson <anderenv@q.com>

FYI

From: Clay_Fletcher@fws.gov [mailto:Clay_Fletcher@fws.gov]
Sent: Thursday, April 12, 2012 2:23 PM
To: Shawn Smith
Subject: Thorncreek to Moscow and Silene

Hi Shawn - I'm a little confused about the confusion! Yes, Zach proposed the mitigation for the Top of Lewiston Hill to Genesee Silene incident. He also saw the proposed actions as a conservation action under sec 7(a)(1) for the Thorncreek to Moscow project. Specifically, in his Addendum to the BA for this Lewiston Hill project in Proposed Mitigation Item #4, he states :

"In addition to completing mitigation actions for the impact to a Spalding's catchfly location within the project boundaries of the Top of Lewiston Hill to Genesee project, ITD also intends to acknowledge this project as mitigation for the Thorncreek Road to Moscow project under Section 7(a)1 of the ESA. The location of Renfrew easement area is within the study area for the Thomcreek Road to Moscow project and the Jensen site is adjacent to the action area. This would complete mitigation actions planned for the Spalding's catchfly impact at the Mervyn Farm's site."

As far as the Service is concerned, there was no required mitigation for the Thorncreek project. The mitigation was for the Lewiston Hill mishap but was going to be implemented in the "study area" for the Thorncreek project. In my letter of concurrence for the Thorncreek project, I included the Zach's proposed "mitigation" because it would benefit Spalding's. The NLAA determination would stand without the "mitigation."

ITD has made a good faith effort to accomplish the proposed mitigation even though the results were not quite all that we were hoping for. We are still hoping additional protective measures for Spalding's can be accomplished through formal or informal conservation easements when the opportunity is available.

If it would help for Mark and me to have a conversation about this with FHWA, please let me know.

Thanks and let me know if you have questions or need anything additional.

Clay

U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, ID 83709
(208) 378-5256; fax (208) 378-5262
clay_fletcher@fws.gov

CenturyLink Webmail

anderenv@q.com

+ Font Size -

FW: FWS File 912.0301 2007-I-0368 Concurrence Letter

From : Ken Helm <Ken.Helm@itd.idaho.gov> Wed, Dec 07, 2011 09:05 AM
Subject : FW: FWS File 912.0301 2007-I-0368 Concurrence Letter 1 attachment
To : 'anderenv@q.com' <anderenv@q.com>

This was the response back from FWS. Ken

From: Clay_Fletcher@fws.gov [mailto:Clay_Fletcher@fws.gov]
Sent: Friday, December 02, 2011 8:59 AM
To: Shawn Smith
Cc: Mark_Robertson@fws.gov; Sue Sullivan; kyle.holman@dot.gov; Victoria Jewell Guerra; Ken Helm
Subject: Re: FWS File 912.0301 2007-I-0368 Concurrence Letter

Hi Shawn - Given that you describe no changes to the project or anticipated effects to the Spalding's catchfly as detailed in your original project BA, the Service agrees with the ITD's conclusion that our 2007 letter of concurrence remains valid. Reinitiation of consultation is not warranted at this time. However, if your proposed action is modified, environmental conditions change, or additional information becomes available regarding potential effects on listed species, you should verify that your conclusions are still valid.

In addition, our 2007 consultation included commitments by the ITD to proactively work towards the conservation of Spalding's catchfly and mitigate damage to an existing population (Mervyn Farm site) that occurred during construction activities associated with the Top of Lewiston Hill to Genesee project. These commitments included acquiring a conservation easement on the Renfrew property (within the Thorncreek to Moscow action area) to protect a small catchfly population and growing out and transplanting catchfly plants on the Jensen property (adjacent to the Thorncreek to Moscow action area), the Renfrew property, and the Mervyn Farm site (after rehabilitating and fencing the site). I assisted with seed collection in 2007 and know seeds were germinated at the Palouse Land Trust facility, but haven't heard anything additional in quite some time. Could you please provide me with an update on the status of these conservation efforts?

Thank you.

Clay

U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, ID 83709
(208) 378-5256; fax (208) 378-5262
clay_fletcher@fws.gov

Shawn Smith <Shawn.Smith@itd.idaho.gov>

12/01/2011 03:43 PM

To "Mark Robertson (Mark_Robertson@fws.gov)" <Mark_Robertson@fws.gov>, Sue Sullivan <Sue.Sullivan@itd.idaho.gov>
cc "'kyle.holman@dot.gov'" <kyle.holman@dot.gov>, Victoria Jewell Guerra <Victoria.JewellGuerra@itd.idaho.gov>, Ken Helm <Ken.Helm@itd.idaho.gov>
Subject FWS File 912.0301 2007-I-0368 Concurrence Letter

Re: US-95Thorncreek Road to Moscow Highway Construction Project
(Key #9294)-- Latah County, Idaho-- Concurrence
File #912.0301 2007-I-0368

Dear Mark,

In anticipation of submittal of a Draft Environmental Impact Statement (DEIS) for the above referenced project, ITD is currently reviewing and updating the previous ESA consultation for the above referenced project. Concurrence on the original Biological Assessment for the project was received from your office April 12, 2007 that the project is not likely to adversely affect Spalding's catchfly (Silene spaldingii)

As of the latest United States Fish and Wildlife Service Species list dated August 17, 2011 the only changes to listed species within Latah County, ID is the removal of the Gray wolf, (Canis lupus) which was listed as experimental non-essential.

At the time of this writing the Idaho Transportation Department has not changed the original proposed highway design and are still evaluating the three proposed alignments your office consulted on in 2007. Based on this information and the lack of substantive species change there should be no difference in the level of effect to listed species determined from the original B.A. for this project. All other components of the existing consultation remain the same and therefore, ITD believes the determination for Spalding's catchfly of "not likely to adversely affect" is still valid as originally intended and reinitiating consultation is not warranted at this time.

Shawn W. Smith

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Snake River Fish and Wildlife Office
1387 S. Vinnell Way, Room 368
Boise, Idaho 83709
Telephone (208) 378-5243
http://IdahoES.fws.gov

RECEIVED

APR 16 2007

DIV. OF HIGHWAYS
LEWISTON, IDAHO

APR 12 2007

Dennis Clark
Environmental Section Manager
Idaho Transportation Department
P.O. Box 7129
Boise, Idaho 83707-1129

Subject: US-95 Thorncreek Road to Moscow Highway Construction Project (Key #9294)—Latah County, Idaho—Concurrence
File #912.0301 2007-I-0368

Dear ~~Mr. Clark~~ Dennis:

This letter transmits the Fish and Wildlife Service's (Service) concurrence on the effects of the Thorncreek Road to Moscow Highway Construction Project on species listed under the Endangered Species Act of 1973, as amended. In a letter dated and received by the Service on March 16, 2007, the Idaho Transportation Department (Department) requested concurrence with the determination, documented in your Biological Assessment (Assessment), that the project is not likely to adversely affect Spalding's catchfly (*Silene spaldingii*).

The Department proposes to widen and straighten US-95, from approximately one mile south of Moscow to approximately eight miles north of Genesee, encompassing 6.5 miles of the existing highway corridor. Three alternate alignments are proposed within the two mile wide project area. None of the proposed alignments is further than 1.5 miles away from the existing US-95 right-of-way. The Department has not chosen a final alignment from among those proposed, so the action area for section 7 purposes is equivalent to the project area (i.e., encompasses all three proposed alignments).

The Department proposes to widen the existing two-lane highway to a four-lane divided highway, and realign the road as necessary to meet a 70 miles per hour design speed criteria within the project area. Standard best management practices and design criteria will be used to minimize resource impacts. Refer to the Assessment for a complete project description including design criteria.

Our concurrence that the project is not likely to adversely affect Spalding's catchfly is based on the following rationales as presented in the Assessment.

1. Surveys of suitable habitat in the project area found only one Spalding's catchfly occurrence consisting of six plants. No Spalding's catchfly plants were found within the footprint of any of the three alignments, and therefore, no direct effects to Spalding's catchfly are anticipated.

2. The project may indirectly affect Spalding's catchfly by increasing the risk of weed establishment in areas up to one kilometer away from disturbed areas associated with highway construction. All of the proposed alignments have the potential to indirectly affect the known occurrence of Spalding's catchfly and Palouse prairie remnants capable of supporting the catchfly, although within the zone of potential weed establishment, the known occurrence is still more than 1,000 feet from the closest alignment. This distance, combined with the Department's roadsides management direction, reduces the risk of weed establishment resulting from highway construction and use. Furthermore the Department is responsible for controlling and managing noxious weeds on all property under its jurisdiction.

3. The Department will benefit Spalding's catchfly by working proactively to conserve and restore Spalding's catchfly in the project area. These efforts will include establishing a conservation easement to protect the known occurrence, conducting additional surveys for Spalding's catchfly, and working to establish additional catchfly populations (seed collection, propagation, and planting out in suitable habitat).

This concludes informal consultation on the proposed project under section 7 of the Act. If the proposal addressed in this letter is modified, environmental conditions change, or additional information becomes available regarding potential effects on listed species, you should verify that your conclusions are still valid.

Thank you for your interest in the conservation of threatened and endangered species. Please contact Clay Fletcher at (208) 378-5256 if you have questions concerning these comments.

Sincerely,

for

Jeffery L. Foss, Field Supervisor
Snake River Fish and Wildlife Office

cc: ITD, Lewiston (Smith)
IDFG, Lewiston (Hennekey)

INFO	D2	ACT	SH3	DE	DTE	MTLS	EPS	DRI	EST	ADE	RE-A	RE-B	PDE	LRIE-TPS	RW	MTCE	MTC FRMN	ALL SHEDS	DBM	ALL SUPV

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 12/3/06	4. Sheet 1 of 1	
1. Name of Project Thorncreek Rd. to Moscow ph 2	5. Federal Agency Involved FHWA		
2. Type of Project Transportation	6. County and State Latah County, Idaho		
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 11/20/06	2. Person Completing Form Ed Haagen	
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐		4. Acres Irrigated 0	Average Farm Size 494
5. Major Crop(s) Winter Wheat	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: 266,300 % 38	
8. Name Of Land Evaluation System Used LESA	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS 11/27/06	

PART III *(To be completed by Federal Agency)*		Alternative Corridor For Segment			
		Corridor W4	Corridor C3	Corridor E2	Corridor
A. Total Acres To Be Converted Directly		159	102	158	
B. Total Acres To Be Converted Indirectly, Or To Receive Services		0	0	0	
C. Total Acres In Corridor		159	102	158	
PART IV *(To be completed by NRCS)* **Land Evaluation Information**					
A. Total Acres Prime And Unique Farmland		47	25	51	
B. Total Acres Statewide And Local Important Farmland		105	70	95	
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0	0	0	
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		0	0	0	
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*		79	79	79	
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area in Nonurban Use	15	14	14	14	
2. Perimeter in Nonurban Use	10	9	8	10	
3. Percent Of Corridor Being Farmed	20	19	17	11	
4. Protection Provided By State And Local Government	20	20	20	20	
5. Size of Present Farm Unit Compared To Average	10	10	10	10	
6. Creation Of Nonfarmable Farmland	25	10	13	17	
7. Availability Of Farm Support Services	5	5	5	5	
8. On-Farm Investments	20	20	20	20	
9. Effects Of Conversion On Farm Support Services	25	0	0	0	
10. Compatibility With Existing Agricultural Use	10	3	2	4	
TOTAL CORRIDOR ASSESSMENT POINTS	160	110	109	111	
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	79	79	79	
Total Corridor Assessment (From Part VI above or a local site assessment)	160	110	109	111	
TOTAL POINTS *(Total of above 2 lines)*	260	189	188	190	

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☑

5. Reason For Selection:

See Attached Remarks For Each Alternative

Signature of Person Completing this Part: **Ed Haagen**

DATE **12/3/06**

NOTE: Complete a form for each segment with more than one Alternate Corridor

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

March 8, 2004

Reply To
Attn Of: ECO-088

Mr. Russell L. Jorgenson
Federal Highway Administration
Idaho Division Office
3050 Lakeharbor Lane, Suite 126
Boise, Idaho 83703

Ref: 03-084-FHA

Dear Mr. Jorgenson:

The Environmental Protection Agency (EPA) has received the Notice of Intent to prepare an Environmental Impact Statement (EIS) for the proposal to improve **US 95 Thorn Creek to Moscow, Idaho**. While we intend to participate in the resource agency scoping meeting and field trip planned for this spring as well as subsequent opportunities for interaction, we feel there is value in offering comments prior to the meeting, at the earliest possible stage, to enable project proponents to incorporate them into project planning. These comments are submitted pursuant to our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

The following is not a comprehensive list of issues that should be addressed in the environmental analysis, but it includes those that we think should be emphasized based on the limited information we currently have about the project and the affected area:

High value habitats – need for avoidance, minimization of impacts and context sensitive design. From phone conversation and the Notice of Intent we understand that the subject corridor for this EIS is a 6.1 to 7.4 mile subset of the larger 20.8 mile corridor studied in the *Top of Lewiston Hill to Genesee and Genesee to Moscow Environmental Assessment (EA)*. While we do not have a description of the subject segment for this EIS, we anticipate that high value Palouse prairie habitat, wetlands, and streams are in the project area and may be affected by the proposed project. The EA (p. 22) states that remnants of Palouse prairie occur mostly on steep slopes and in marshy areas. An occurrence of Spalding's catchfly (*Silene spaldingii*), proposed as threatened under the Endangered Species Act (ESA), has been documented in habitat surveys for the EA. According to the U.S. Fish and Wildlife Service (USFWS), the threatened Ute ladies' tresses (*Spiranthes diluvialis*), and the threatened water howellia (*Howellia aquatillis*), may also occur in the EA project area. White tail deer, chukar, Hungarian partridge, bobwhite and California quail, waterfowl, and several species of concern, including ring-necked snake, northern alligator lizard, wolverine, fisher, long-eared myotis, fringed myotis, Northern goshawk, Northern pygmy owl, and pygmy nuthatch also occur in the EA project area.

Based on the above information, it will be important to use extraordinary sensitivity, or Context Sensitive Design, in the design and placement of the roadway to ensure that the natural values and functions of the area, as well as any identified social, cultural, historical, and/or scenic values, remain intact. One of the most critical aspects of applying context sensitive design is the preservation of ecological connectivity (see explanation below). This can best be achieved using avoidance and minimization of impacts – which are the first and second priorities for mitigating impacts – through sensitive planning, alternatives analysis, siting and design. Compensatory mitigation is appropriate only for truly unavoidable impacts that cannot be further addressed through improved siting and design when an action alternative is selected.

We anticipate that avoidance of sensitive, rare, and/or high value terrestrial and aquatic habitats will be the most significant environmental need for this proposed project. Maintaining habitat connectivity and providing for safe and effective movement of wildlife and aquatic species will be a necessity.

Ecological connectivity. The roadway alternatives will, to varying degrees, potentially fragment habitats, create a barrier to wildlife movement, result in wildlife roadkill, and sever other aspects of ecological connectivity in the project area. The EIS should provide an analysis of the alternatives with respect to ecological connectivity needs and impacts, and include adequate mitigation measures to avoid and minimize the impacts. The EIS should include this analysis and propose mitigation for both terrestrial and aquatic ecosystem processes, habitats, and species in consultation with the resource agencies.

For terrestrial species, this will involve identifying habitat linkages (movement corridors) that need to be preserved or re-established, safe wildlife crossings/structures under or over the roadway that accommodate the species residing in the area, and fencing that effectively prevents wildlife entry onto the roadway and that funnels them to safe crossing locations/structures. These actions provide for the safety of both wildlife and motorists.

Ecological connectivity is a broader concept, however, than wildlife movement in the landscape. It includes the connections and interactions between land and water, the transfer of water, wood, soil, nutrients, genes, species, and so on. For example, ecological connectivity is impaired when a stream is channelized and separated from its flood plain; when shoreline structures or bank armoring block sediment flows and shoreline enrichment processes; when dams are built or culvert installation block fish passage; when wetland fills or impervious surface prevent ground water aquifer recharge; when hillslope cuts breach seepage areas, springs, or underground aquifers; when aquatic habitat hydrological alterations and development interfere with surface water/ground water interactions and riverine hyporheic zones; and so on. Environmental impact assessments need to focus much more on identifying these connections and the consequences of severing them; project design should incorporate the means to preserve them.

Aquatic resources. Road construction may affect aquatic resources: (1) additional human use in and around streams as well as construction of and additional runoff from impermeable road surfaces will adversely impact water quality; (2) wetlands and riparian areas located adjacent to the road may be encroached upon and their hydrologic function altered; and (3) road encroachment may degrade the habitat for fish and other aquatic biota. For any impacts that cannot be avoided through siting and design, the NEPA document should describe the types, location, and estimated effectiveness of best management practices (BMPs) applied to minimize and mitigate impacts to aquatic resources.

To meet the requirements of the Clean Water Act, the NEPA document must identify all water bodies likely to be impacted by the project, the nature of the potential impacts, and the specific pollutants likely to impact those waters. If there are Clean Water Act 303(d)-listed waterbodies, the NEPA document must additionally state whether a Total Maximum Daily Load (TMDL) has been developed for the streams and the pollutant(s) of concern. Provisions for antidegradation of water quality apply to streams where water quality standards are presently being met.

Wetlands and riparian areas. The proposed road construction may affect the functions, structure, and hydrologic flow of any impacted riparian areas and wetlands. The NEPA document should describe riparian areas, including widths, types of vegetation, and functional values and integrity. The document should provide wetland determinations, estimated acreage, types, and ecological functions of wetlands in the planning area. Also, the document should address in detail the potential loss of riparian and wetland functions and diminished water quality under each of the action alternatives.

The proposed activities may require a CWA Section 404 permit, both for in-stream and wetland alterations. For wetlands, section 404(b)(1) guidelines state that impacts to wetlands are to be (1) avoided, (2) minimized, and (3) mitigated. The NEPA document should discuss in detail how planning efforts conform with decision-making direction specified in Section 404(b)(1) guidelines. FHWA must show, under Section 404, that they have avoided impacting the wetlands to the extent possible. The NEPA document should discuss alternatives that would not impact wetlands before proceeding to minimization/mitigation measures. Wetland mitigation measures should be designed to replace wetland functions lost as a result of the project. Wetland functional assessments should be used to demonstrate the adequacy of the wetland mitigation efforts.

Endangered, threatened, candidate, sensitive species. If the proposed project activities could affect species listed under the Endangered Species Act as threatened or endangered, the NEPA document should include the Biological Assessment and the associated FWS or NMFS Biological Opinion or formal concurrence for the following reasons:

- NEPA requires public involvement and full disclosure of all issues upon which a decision is to be made.

- The CEQ Regulations for Implementing NEPA strongly encourage the integration of NEPA requirements with other environmental review and consultation requirements (40 CFR 1502.25).

- The Endangered Species Act (ESA) consultation process can result in the identification of mandatory, reasonable, and prudent alternatives that can significantly affect project implementation.

Since both the Biological Assessment and the NEPA document must evaluate the potential impacts of the project on listed species, they can jointly assist in analyzing the effectiveness of project alternatives and mitigation measures. EPA recommends that the final NEPA decision document not be completed prior to the completion of ESA consultation. If the consultation process is treated as a separate process, the federal agency risks FWS and/or NMFS identification of additional significant impacts, new mitigation measures, or changes to the preferred alternative. If these changes have not been evaluated in the original NEPA document, a supplement to the document would be necessary.

In addition to federally listed endangered and threatened species, there may also be state listed species, candidate state or federal species, and other sensitive or declining plant and animal species and their habitats in the project area. We recommend that the state Natural Heritage Program, the state and federal fish and wildlife agencies, and other appropriate authorities on the conservation of biological diversity be contacted to identify these species and their habitats. The EIS should disclose these sensitive species and habitats, and the alternatives presented should reflect all possible measures to avoid and minimize disturbance or harm to them.

Invasive species. Ground disturbing activities create opportunity for establishment of non-native invasive species. In compliance with NEPA and with the Executive Order 13112, analysis and disclosure of these actions and their effects, as well as any mitigation to prevent or control such outbreaks should be included. We urge that disturbed areas be revegetated using native species, including a native grass and forb mixture to ensure adequate coverage to prevent establishment of invasive plants, and that there be ongoing maintenance (wholly or primarily non-chemical means) to prevent establishment of invasives in areas disturbed by project activities.

Indirect/secondary, and cumulative effects. In addition to the direct impacts to the natural and human environment, secondary and cumulative impacts should be analyzed and disclosed. Examples include increased and induced vehicle miles traveled (VMT); induced growth and development and its associated terrestrial and aquatic habitat losses, fragmentation, and alterations, water and air quality effects, fish and wildlife mortality and disturbance effects, and other impacts that are likely to result. The affected environment for each resource category should be adequately described to establish past impacts, and existing baseline conditions and stresses to those resources, so that the added effects can be discerned.

Cultural resources. The intact, high value habitats in the project area may also have significant cultural value for Native Americans, such as the Nez Perce, Colville, and Coeur d'Alene Tribes. Impacts to tribal cultural resources and historic and archeological resources need to be disclosed in the EIS.

Under NEPA, the scope of cultural resource analysis should include direct and indirect impacts to traditional resource rights, historic buildings, historic districts, archeological sites, Native American traditional places, sacred sites, environmental justice issues, and traditional ways of life. The following is a list of specifics that we believe should be addressed in the EIS for a complete analysis of cultural resources:

- sacred sites (see Executive Order 13007);
- traditional cultural properties or landscapes;
- hunting, fishing, gathering areas (including impacts to ecosystems that support animals and plants that are or once were part of the tribes' traditional resource areas);

- access to traditional and current hunting, fishing, and gathering areas and species (berries, root foods, basket weaving materials, fire wood, elk, deer, trout, and any other species of concern to the tribes);
- changes in hydrology or ecological composition of springs, seeps, wetlands, and streams, that could be considered sacred or have traditional resource use associations;
- travel routes that were historically used, and travel routes that may be currently used;
- historic properties, districts, or landscapes;
- cultural uses of the natural environment, the built environment, and human social institutions;
- unique characteristics of the geographic area such as proximity to historic or cultural resources (40 CFR 1508.27(b)(3));
- the degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (40 CFR 1508.27(b)(8) in accordance with the National Historic Preservation Act (NHPA);
- Potential disproportionate or adverse environmental impacts to low income and minority populations (see E.O. 12898); such impacts may be cultural, for example, impacts on a culturally important religious, subsistence, or social practice should be addressed;
- impacts to Indian Sacred Sites. E.O. 13007 requires that federal agencies minimize damage to sacred sites on federal land, and avoid blocking access to such sites by traditional religious practitioners.

EPA recommends conducting ethnographic interviews and compiling ethnohistoric information about the area. EPA also recommends close consultation with the tribes (see E.O. 13175), and the appropriate State Office for archaeology and historic preservation.

We recommend that NHPA Section 106 review be conducted during the preparation of the DEIS and that consultation be initiated with affected and potentially affected tribes and Native American descendants. Consultation to resolve adverse effects should be coordinated with public comment on the DEIS, with the results reported in the Final EIS. Any Memorandum of Agreement (MOA) developed under Section 106, or the final comments of the Advisory Council on Historic Preservation (ACHP), should be addressed in the ROD. The Section 106 MOA should be fully executed before the ROD is issued, and the ROD should provide for implementation of the MOA's terms.

Social/cultural effects and Environmental Justice. We recommend conducting community impact assessments for communities that are most affected by the proposed project. The Federal Highway Administration (FHWA) publication, *Community Impact Assessment: A Quick Reference for Transportation* [publication No. FHWA-PD-96-036, HEP-30/8-96(10M)P], is available as guidance, and pertinent websites can also provide information. Historic resources and the full range of tribal treaty resources, as discussed above, should be addressed. Formal consultation should be conducted regarding both their natural and cultural resources affected by the proposed project. Useful references include:

- http://www.npi.org/nepa/index.html regarding NEPA and cultural resources;
- http://www.epa.gov/compliance/resources/publications/ej/ips_consultation_guide.pdf includes the document, *Guide on Consultation and Collaboration with Indian Tribal Governments and the Public Participation of Indigenous Groups and Tribal Members in*

Environmental Decision Making.

- Executive Orders:
  - E.O. 13175, Consultation and Coordination with Tribes;
  - E.O. 13007, Indian Sacred Sites;
  - E.O. 12898, Environmental Justice.

In compliance with NEPA and with E.O. 12898 on Environmental Justice, actions should be taken to conduct adequate public outreach and participation that ensures the public and Native American tribes truly understand the possible impacts to their communities and trust resources. Environmental Justice communities and tribes must be effectively informed, heard, and responded to regarding the project impacts and issues affecting their communities and natural and cultural resources. The information gathered from the public participation process and how this information is factored into decision-making should be disclosed in the EIS.

The U.S. has a unique relationship with tribal governments, which requires that federal government plans, projects, programs and activities assess impacts on tribal trust resources. Agencies shall assess all impacts to tribal trust resources and include those impacts in the agencies' environmental documents. In accord with the Executive Memo of April 29, 1994, on Government-to-Government Relations with Native American Tribal Governments, each federal agency shall consult to the greatest extent practicable and to the extent permitted by law, with tribal governments prior to taking actions that affect federally-recognized tribal governments.

Air Toxics. There is heightened concern for human health from projects that result in air toxics emissions and particulate matter from mobile sources, particularly diesel exhaust. The EIS should disclose the human health effects of air toxics and particulate matter from mobile sources, and identify any sensitive receptor locations for the project. For receptor locations, we recommend that hotspot analysis be conducted for these pollutants, and that construction mitigation measures be included. We have enclosed a list of potential mitigation measures to reduce emissions during construction.

We appreciate the opportunity to offer these comments and look forward to working collaboratively on the project with FHWA and all interested and affected parties. Please contact me at 206/553-2966 or somers.elaine@epa.gov, if you have questions or would like to discuss these comments.

Sincerely,

Elaine Somers

Elaine Somers
NEPA/309 Environmental Review
Geographic Unit

Enclosure

December 21, 2010

Mr. Dave Cadwallader
Clearwater Regional Supervisor
Idaho Department of Fish & Game
3316 16th Street
Lewiston, ID 83501

Re: Project No. DHP-NH-4110(156); Key No. 09294
Transmittal of *Assessment of Potential Big Game Impacts and Mitigation Associated with Highway Alternatives from Thorncreek Road to Moscow*

Dear Mr. Cadwallader:

The Idaho Transportation Department ("ITD") appreciates the past assistance provided by the Idaho Department of Fish and Game ("IDFG") to assess potential wildlife impacts relating to the US-95 Thorncreek Road to Moscow project.

In follow-up to prior discussions with and comments received from IDFG, ITD transmits herewith the report prepared by Western Ecosystems Technology entitled *Assessment of Potential Big Game Impacts and Mitigation Associated with Highway Alternatives from Thorncreek Road to Moscow*. The enclosed report concludes that "[g]iven the marginal quality habitat and limited observations of moose and elk in the area, there is no evidence that suggests the E-2 alternative would have measurable impacts on either species. Accordingly, mitigation for direct habitat loss, indirect habitat loss, or loss of connectivity for moose or elk is not warranted." However, the Report recommends future monitoring of vehicular-wildlife collisions to determine whether future mitigation might be warranted in Sections of E-2 (in the event E-2 is selected as the preferred alignment). ITD also transmits ITD's *Safety Evaluation*, which explains implementation of the monitoring recommendation.

Thank you again for your assistance. Please feel free to contact me at (208) 799-5090, should you have any questions.

Sincerely,

ORIGINAL SIGNED BY:
KENNETH G. HELM, Project Manager
Thorncreek Road to Moscow

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Enclosure

bcc: DE2 PDE2 DTE2 EP

#9294

IDAHO DEPARTMENT OF FISH AND GAME

CLEARWATER REGION
3316 16th Street
Lewiston, Idaho 83501

C.L. "Butch" Otter/Governor
Cal Groen/Director

October 26, 2007

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DIV. OF HIGHWAYS
LEWISTON, IDAHO

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Mr. James Carpenter, District Engineer
Idaho Transportation Department
District 2
P.O. Box 837
Lewiston ID 83501

Dear Jim:

In December or 2006, at your request, IDFG submitted to you a Wildlife Assessment for the proposed US95 Thorncreek to Moscow highway improvement project. Clearwater Region IDFG staff prepared this report in the spirit of interagency cooperation and to enhance protection of fish and wildlife in our region.

Furthermore, at ITD's request, our Wildlife Assessment recommended mitigations for impacts of the proposed highway on wildlife and wildlife habitat. Our recommendations were not an exhaustive list of the potential options available for mitigation, and were not intended to be limiting. Instead, our goal was for our recommendations to stimulate considerable thought and discussion between our agencies that would ultimately lead to appropriate and effective protections and enhancements for wildlife as part of the Thorncreek to Moscow highway project.

In May, we received a request from ITD for additional information regarding the Wildlife Assessment and our recommended mitigations (ITD, Funkhouser letter, May 3, 2007). IDFG responded to your request (IDFG, Cadwallader letter, June 23, 2007) Then, Dave Cadwallader, IDFG Region 2 Supervisor, and Ray Hennekey, Region 2 Environmental Staff Biologist, met with yourself, and ITD's Zack Funkhouser and Ken Helm on August 2 to further discuss our mitigation recommendations and attempt to resolve differences in outlook and approach to mitigation.

ITD informed us at the meeting that most of the mitigations we had recommended in the Wildlife Assessment were acceptable to ITD. However, there were two glaring exceptions: First, ITD was concerned about the cost of, and not convinced of the need to construct passage structures for big game, as recommended by Melquist in an independent contract report to ITD. IDFG had offered support for Melquist's recommendations in the Wildlife Assessment.

Second, and apparently most problematic from ITD's perspective, was IDFG's recommended mitigation to replace wildlife habitat that would be lost to the highway footprint. Our recommendation in the Wildlife Assessment, which included a 300 meter disturbance zone on either side of the highway, was for replacement of habitat at a 1:1 (acres replacement/acres lost) ratio for the central and western alignments and at a 2:1 ratio for the eastern alternative, where both direct and indirect wildlife impacts will be greatest. In our August meeting, you made it very clear that ITD does not feel that it has any responsibility to mitigate for wildlife or habitat unless ESA species are involved. Furthermore, you stated that replacement of lost habitat at the rates we recommended would stymie the project because of the added cost of purchasing land or easements for wildlife habitat. In essence, ITD rejected this mitigation recommendation out of hand.

IDFG acknowledged the potential cost of the recommended mitigation and, though we believe mitigation is necessary and appropriate, stated our shared interest in completing the US95 improvements. Therefore, in lieu of the habitat replacement ratios we initially proposed, IDFG offered to develop a baseline funding proposal for a "bank" or trust to be funded by ITD as mitigation for habitat loss. The proposed fund would be used to provide funding for purchases of easements or habitat, for habitat improvements in the Palouse region, or for other activities that would benefit wildlife. IDFG also agreed that wildlife passage structures for big game were not necessary and might not be effective. At the August meeting, ITD accepted those offers and agreed to consider a baseline funding proposal that IDFG would prepare. Therefore, we submit the following,

IDFG's alternative mitigation proposal:

> ITD will deposit \$500,000 for the western alignment (W4, 185 acres at 1:1) or \$325,000 for the central alignment (C3, 125 acres at 1:1) or \$750,000 for the eastern alignment (E2, 185 acres at 1.5:1) into a fund that will be used to acquire, protect or enhance wildlife habitat or to fund other activities to benefit wildlife in the Palouse Ecoregion (ecoregion as defined in the Idaho CWMS). The fund will be administered by IDFG.[1] Other details (*e.g.,* where the fund will be housed, etc.) will be made pending ITD acceptance of this recommendation.

IDFG believes this to be a very reasonable alternative to our original mitigation proposal – we think the bank can be used to provide meaningful protection for wildlife and habitat at less than 1 percent of the total project cost and at a fraction of what the original IDFG mitigation proposal would have cost ITD. In addition, we made several substantive concessions to arrive at this alternative proposal. These include:

- calculating the value based only on the actual new highway footprint – we did not include the 300 meter disturbance zone we included in our previous recommendations;
- calculating alternative E2 acres replacement at 1.5:1 acre lost, instead of 2:1 as originally proposed; and
- IDFG withdrew support for construction of the 2-3 big game passage structures recommended by Melquist.

[1] The values were calculated based on an approximate average current selling price of \$2600 per acre for prime agricultural land in Latah County in the vicinity of the project. Based on our research of current real estate values, recent sales, and other agencies' calculations for purchase for easement, the selling price for prime farmland is approximately \$2600/acre. Non-prime agricultural land in the project, which sells for slightly less, makes up a very small percentage of the total area effected and was calculated at the same rate. Also, differences expected from including lesser value non-prime land at the same rate is more than compensated by using a median value that did not include the current development value of farmland, which was determined to be approximately \$4500/acre. Also, more costly residential land values were not included. All development value and residential property was included in the total at the \$2600/acre rate. An additional compensation was to round up to a nice even number to arrive at the amounts identified.

In closing, we feel it is important to repeat one additional mitigation recommendation we have made in the Wildlife Assessment and at every other opportunity: We recommend avoidance of the eastern alignment. It has been IDFG's position from the start – a position supported by recommendations from the other resource agencies – that the eastern alternative will have the greatest direct and indirect impacts to wildlife and other resources. Avoidance of impact is the primary mitigation tool available. We recommend avoidance of alternative alignment E2.

Please consider these recommendations in the spirit of cooperation in which we offer them. We make this proposal as a good faith effort to engage ITD in continuing negotiations to develop meaningful and effective mitigations for impacts of the US95 Thorncreek project to wildlife. We hope you give this proposal serious consideration.

Please contact me or Ray Hennekey at the Clearwater Regional Office if you have any questions regarding this proposal.

Sincerely,

Dave Cadwallader

Dave Cadwallader
Clearwater Regional Supervisor

DC/rh/cs

C: Bart Butterfield, NRPB

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JUN 28 2007

DIV. OF HIGHWAYS
LEWISTON, IDAHO

ACTION # 07-0351

IDAHO DEPARTMENT OF FISH AND GAME
CLEARWATER REGION
3316 16th Street
Lewiston, Idaho 83501

June 23, 2007

C.L. "Butch" Otter / Governor
Cal Groen / Director

Mr. James Carpenter, District Engineer
Idaho Transportation Department
District 2
P.O. Box 837
Lewiston ID 83501

D2	DE	DTE	MTLS	EPS	DRI	EST		ADE	RE-A	RE-B		PDE	LRE-TPS	RW		MTCE	MTC FRMN	ALL SHEDS		DBM		ALL SUPV
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Dear Mr. Carpenter:

This is in response to your May 3, 2007 letter requesting additional information related to the General Wildlife Assessment for the proposed US95 Thorncreek to Moscow highway improvement project prepared by IDFG Region 2 for ITD.

At ITD's request, Fish and Game's Wildlife Assessment recommended mitigations for impacts from the proposed highway on wildlife and wildlife habitat. Your May 3 letter asks IDFG to provide examples of other projects for which the Department has determined mitigations were necessary to offset impacts to wildlife.

The most recent example of mitigation for highway impacts to wildlife is from ITD's US95 Copeland to Canada highway project. Mitigation for that project included three wildlife underpasses and more than \$100,000 for pre- and post construction monitoring of wildlife. In addition, habitat lost to new highway footprint was mitigated by a cash payment which will be used to benefit wildlife; for instance, to purchase an easement.

Mitigation for lost wildlife habitat is also received for projects other than highway development. For example, recently negotiated mitigations for the Hells Canyon Complex include a minimum of 24,000 acres for terrestrial mitigation, representing a habitat replacement ratio of 2 acres replaced for each acre lost.. The Department also routinely recommends mitigation for housing developments. One recently completed negotiation in Ada County resulted in replacement of habitat lost to a housing development at an approximately 2:1 ratio, including permanent habitat protection easements within the project boundary and a conservation easement nearby and in similar habitat.

As you can see, mitigation for impacts to wildlife habitat is not at all uncommon; expressing mitigation as a ratio of habitat lost vs. habitat replaced is typical; and the mitigation ratios we have recommended for the US95 Thorncreek to Moscow Project are consistent with mitigation received for other projects.

Your second request was for Fish and Game to provide deer, elk and moose data to support or suggest that crossing structures adjacent to Paradise Ridge would (a) be required by the effects of the project, or (b) be used by wildlife in the corridor. You also asked for data IDFG might have to support Wayne Melquist's recommendations for wildlife crossing structures.

Fish and Game has big game survey data for the project area; however, we have not collected data to determine whether crossing structures are required by the effects of the Thorncreek project or whether crossing structures recommended by Melquist would be used by wildlife. If you wish, IDFG would be pleased to discuss an arrangement with ITD that would allow us to collect new data geared specifically to answer those questions.

IDFG's mitigation recommendations in the US95 Thorncreek to Moscow Project Wildlife Assessment were not an exhaustive list of the potential options for mitigation. There are many mitigations that could be used to ameliorate the effects of the project on wildlife. It was Fish and Game's intention from the outset to provide recommendations that would stimulate considerable thought and discussion between our agencies that would lead to effective protections and enhancements for wildlife as part of the Thorncreek to Moscow highway project.

We invite you to meet with us at the Clearwater Regional Office on July 26, from 8-4 to begin to identify a suite of wildlife mitigations for the US95 Thorncreek to Moscow Project that will satisfy both our agencies' needs. Please contact me to confirm your availability for that date or to set another date if you have a conflict. I suggest that it would be best if you can provide us with alternative mitigation proposals at least a week in advance of that meeting so that our conference can be as productive as possible.

Sincerely,

Dave Cadwallader

Dave Cadwallader
Clearwater Regional Supervisor

DC/rh/

c: Tracey Trent
Dennis Clark, ITD Boise

May 3, 2007

Mr. Dave Cadwallader, Regional Supervisor
Idaho Department of Fish and Game
3316 16th Street
Lewiston, ID 83501

Re: Project No. DHP-NH-4110(156); Key No. 9294
Thorncreek Road to Moscow
General Wildlife Assessment

Dear Mr. Cadwallader:

The Idaho Transportation Department has received the General Wildlife Assessment prepared by Ray Hennekey dated December 14, 2006. The assessment recommends several mitigations identified by the IDFG report and the Large Ungulate Report prepared by Wayne Melquist. Both have been reviewed by ITD District Two, Headquarters and our Legal Section, as well as the Federal Highway Administration. ITD feels this process may set precedent for future ITD/IDFG interaction and for this reason, we would like to involve our ITD and your IDFG headquarters offices. Please have your headquarters office review your report and discuss it with Dennis Clark, Environmental Section Supervisor for ITD. Dennis can be reached at (208) 334-8203.

To consider our response to the recommendations made by the IDFG assessment and to document our decision making process, ITD would like to request additional information:

- Please provide information regarding the development of conservation easement mitigation ratios applied to the Thorncreek Road to Moscow project. We are specifically seeking other IDFG projects or reports where this method has been applied or other development or infrastructure projects in which a similar method was used for mitigation development and implementation. Also, any data or information regarding completed projects including mitigation results.

- Please provide any deer, elk or moose population data that supports or suggests that crossing structures adjacent to Paradise Ridge would be required by the effects of the project or utilized by species that exist within the corridor. The Melquist ungulate report identifies crossings as recommended, but not required by population effects of the U.S. 95 project. Please provide any data IDFG has which supports the recommendation for wildlife crossing structures.

Continued...

Mr. Dave Cadwallader, Regional Supervisor
Idaho Department of Fish and Game
May 3, 2007
Page Two

Thank you for your attention to this letter, we look forward to working with IDFG in addressing these issues.

Sincerely,

ORIGINAL SIGNED BY:

ZACHARY A. FUNKHOUSER
Environmental Planner Senior

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ACE/D
ENV (Clark)
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IDAHO FISH & GAME
CLEARWATER REGION
1540 Warner Avenue
Lewiston, Idaho 83501-5699

Dirk Kempthorne / Governor
Steven M. Huffaker / Director

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JUN 22 2005

DIV. OF HIGHWAYS
LEWISTON, IDAHO

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June 20, 2005

Mr. Zachary Funkhouser, Environmental Planner
Idaho Department of Transportation
PO Box 837
Lewiston, Idaho 83501

Dear Zach:

Re: BIOLOGICAL EVALUATION OF POTENTIAL IMPACTS OF CORRIDOR ALTERNATIVES FROM THORNCREEK ROAD TO MOSCOW ON LARGE UNGULATES.

Thank you for the opportunity to review the Biological Evaluation of the Potential Impacts of Corridor Alternatives from Thorncreek Road to Moscow on Large Ungulates (BE). The BE evaluates and compares potential impacts of various construction alternatives for US Route 95 to deer, elk and moose.

The report (BE) has limited value as a tool for selecting construction alternatives based on impacts to large ungulates. The BE is based on a cursory assessment of available habitat and a largely windshield survey of the possible presence and use of potentially effected habitat by deer, elk and moose in the vicinity of three selected alternative alignments. The BE is also based on a review of the literature regarding deer, elk and moose biology and potential impacts of highways on those species.

Based on our own knowledge and experience, the general observations in the BE about big game presence in the study area are probably accurate, and we generally support the recommendations for mitigation. We tend to agree that impacts would range, in declining order of impact to large ungulates, from the eastern-most alternative to the western-most alternative. On the same basis, we can generally accept the recommendations for mitigation in the BE, although we'll look forward to working with ITD to develop specific mitigations, locations for wildlife passage structures, etc. when alternatives are narrowed down and more detailed plans can be developed.

We have some concerns about the BE and some of the conclusions reached regarding impact to deer, elk and moose.

First, the BE would be markedly improved by providing a more rigorous and scientifically sound evaluation of current deer, elk and moose in the project area to support conclusions and recommendations. The evaluation would be greatly enhanced with actual site-specific data to support conclusions. (Please note that the BE states that population data is not available for deer, moose and elk. IDFG has conducted elk surveys in the vicinity of the project and can provide data on elk in subunits where populations may be affected by the project. Moose are not a focus during aerial surveys, but incidental observations of moose are recorded as well.)

The BE concludes that the project will not have population level impacts on deer, elk or moose. This tends to minimize potential impacts to large ungulates as a result of the highway and to infer that mitigation would have limited value. We are inclined to agree that population level impacts are unlikely, at least for large ungulates. However, less than population level impacts are important and should be assessed in a BE. Further, we wish to emphasize that population level impacts are not a prerequisite for mitigation. Any impacts that affect moose, deer or elk or otherwise diminish the resource deserve mitigation.

The BE states that a cumulative impacts analysis was done, then draws conclusions about project impacts and potential mitigation based on that analysis. However, the BE provides no evidence that the kinds of data on which such an analysis would depend was reviewed and evaluated (*e.g.,* current/projected land ownership, current projections for and potential changes in residential growth and development as a result of new highway construction, cumulative impacts of retaining existing portions of the highway in addition to new construction, etc.). Therefore, it appears that a cumulative effects analysis was not done. Conclusions in the BE that the project will not have long-term population-level impacts are highly suspect as a result.

We were disturbed by the inference in the BE that the impacts from the highway project are acceptable because future residential development would eventually destroy habitat and displace big game even if the road is not constructed. Anticipated future impacts to wildlife from residential development in no way minimize impacts from the highway project or make impacts from the highway merely acceptable. Similarly, it is inappropriate to imply that mitigation for the highway might be unnecessary or ineffective because of potential impacts from future development. Anticipated residential growth in the region in no way reduces ITD's obligation to mitigate for both immediate and long-term impacts from the highway, including mitigation for projected changes or increases in residential development to which the highway improvements will contribute.

Because future residential growth is likely to be unavoidable, we repeat our original recommendation to purchase of easements or fee-title of key existing habitats for wildlife as partial mitigation for the project, regardless of alternative selected.

Thanks again for the opportunity to review and comment on this BE and to be involved so early in the process. We look forward to continuing to work with you to develop similar evaluations of US 95 Thorncreek Road to Moscow project impacts to fish, wildlife and habitat.

Sincerely,

Cal Groen

Cal Groen
Clearwater Regional Supervisor

CG/rh/ss

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APPENDIX 2. LIST OF PREPARERS AND REVIEWERS

Name	Responsibility/Role	Education	Experience
US DEPARTMENT OF TRANSPORTATION - Federal Highway Administration (FHWA), Idaho Division			
Ross Blanchard	Project Review	B.S. Civil Engineering	18 years
Kyle Holman	Project Review	B.S. Civil Engineering	6.5 years
John Perry	Project Review	B.S. Civil Engineering	21 years
Paul Ziman	Project Review	B.S. Civil Engineering	24 years
Brent Inghram	Project Review	B.S. Environmental Planning/Management; M.S. Geological Engineering	30 years
IDAHO TRANSPORTATION DEPARTMENT (ITD)			
Ken Helm	Project Management	A.S. Drafting Technology	35 years
Zach Funkhauser	Project Management / NEPA Review	B.S. Biology	12 years
Shawn Smith	Project Management / NEPA Review	B.S. Biology	10 years
Curtis Arnzen	Project Development Engineer / Safety	B.S. Civil Engineering	14 years
Dave Couch	Traffic Control / Safety	B.S. Civil Engineering	24 years
Ron Perkins	Professional Land Surveyor/GIS	2.5 years Civil Engineering Education	16 years
Mark Munch	Cultural Resource Review	M.A. Anthropology	16 years
Paul Frei	Traffic Control / Safety	A.S. Drafting Technology	23 years
Manny Todhunter	Floodplain Assessment	B.S. Civil Engineering	40 years
Dave Ellis	Highway Design	A.S. Drafting Technology	36 years
Dan Everhardt	Architectural History Review	B.A. Museum Studies and History	9 years
Vicky Jewell Guerra	NEPA Review	B.S. Environmental, M.B.A	23 years
US ARMY CORPS OF ENGINEERS (USACE)			
Nicholle Braspennickx	NEPA Review/Wetland and Water of US	B.S. Biology	22 years
ANDERSON ENVIRONMENTAL CONSULTING LLC			
Michelle Anderson	NEPA Review/EIS Technical Writer	B.A. Biology	18 years
Suzanne Pattinson	EIS Technical Writer/GIS Analyst	B.S. Natural Resources	7 years

Name	Responsibility/Role	Education	Experience
TECHNICAL REPORT AUTHORS			
Russell Qualls; ID State Climatologist	Weather Report	Ph.D. Civil and Environmental Engineering	24 years
Ed Haagen; Private Consultant	Farmland Report	B.S. Agricultural Soils	35 years
Shelly Gilmore; Resource Planning Unlimited	Wetlands Technical Reports	B.S. Natural Resource Administration	20 years
Miguel Gaddi HDR	Community Impact Assessment Technical Reports	M.S. Urban and Regional Planning	15 years
Kris Horton Bionomics	Traffic Noise Report	B.S. Animal Science	10 years
David Aizpitarte Bionomics	Traffic Noise Report	B.S. Bacteriology, MBA	25 years
Juanita Lichthardt	Rare Plant Inventory Report / Biological Assessment	B.A. Biology, M.A. Biology	26 years
Wayne Melquist	Wildlife Inventory Report / Biological Assessment	B.S. Biology, M.S. Zoology Ph.D. Wildlife Resources	42 years
William Ruediger	Wildlife Report	B.S. Wildlife Management M.S. Forest Management	40 years
Hall Sawyer	Wildlife Report	B.S. Wildlife Biology M.S. Zoology Ph.D. Zoology and Physiology	17 years
Stan Gough	Archaeological / Architectural Report	B.A. Anthropology M.S. Geology	35 years
Ann Sharley	Archaeological / Architectural Report	B.A. Anthropology M.A. Historic Preservation	20 years
Rosemary Curtain; RBCI Incorporated	Public Involvement	B.S. Economics and Political Science M.A. Public Policy	14 years

APPENDIX 3. LIST OF AGENCIES, ORGANIZATIONS AND PERSONS RECEIVING THE DEIS

Public Viewing Locations

The following are locations where hard copies of the DEIS may be viewed:

Federal Highway Administration
Idaho Division
3050 Lakeharbor Lane, Suite 126
Boise, ID 83703

Genesee Public Library
140 East Walnut Street
Genesee, ID 83832

Idaho State Library
Main Office
325 W State St.
Boise, ID 83702

Idaho State Library
Northern Field Office
1420 S. Blaine Ste. B
Moscow, ID 83843

Idaho Transportation Department
District 2
2600 Frontage Rd.
Lewiston, ID 83501-0837

Idaho Transportation Department
Headquarters
3311 W. State St.
Boise, ID 83703

Latah County Library
110 South Jefferson St.
Moscow, ID 83843

Lewiston Library
428 Thain Rd.
Lewiston, ID 83501

Moscow Chamber of Commerce
411 S. Main Street
Moscow, ID 83843

Moscow City Hall
206 East Third Street
Moscow, ID 83843

Moscow Public Library
110 South Jefferson St.
Moscow, ID 83843

The document and technical reports may also be downloaded or viewed electronically through project website at: www.itd.idaho.gov/Projects/D2/ and select "US-95 Thorncreek to Moscow Phase I."

List of agencies, organizations and persons to whom copies of the statement are sent:

Department of Interior
Office of Environmental Policy & Compliance
Main Interior Building, MS 2342
1849 C Street NW;
Washington, DC 20240

Carla Fromm
Environmental Protection Agency
1435 North Orchard Street
Boise, ID 83706

Elaine Somers
US Environmental Protection Agency
1200 Sixth Street
Seattle WA 98101

US Environmental Protection Agency
Office of Federal Activities, EIS Filing
Ariel Building; South Oval Lobby
Mail Code 2252-A
1200 Pennsylvania Avenue, NW
Washington DC 20460

Nez Perce Tribal Executive Committee
Nez Perce Tribe
P.O. Box 365
Lapwai, ID 83540

Clay Fletcher
U.S. Fish & Wildlife Service
1387 S. Vinnel Way, Suite 368
Boise, ID 83709

Idaho Department of Fish & Game
3316 16th Street
Lewiston ID 83501

Idaho State Historic Preservation Officer
210 West Main Street
Boise, ID 83702-7264

Advisory Council on Historic Preservation
1100 Pennsylvania Ave NW, Suite 809
Washington, DC 20004

Cindy Barrett
Idaho Department of Environmental Quality
1118 “F” Street
Lewiston ID 83501

City of Lewiston
P.O. Box 617
Lewiston ID 83501

City of Moscow
P.O. Box 9203
Moscow, ID 83843

City of Genesee
P.O. Box 38
Genesee, ID 83832

Ronald Wittman
Nez Perce County Commissioner
P.O. Box 896
Lewiston, ID 83501

Tom Strochein
Latah County Commissioner
P.O. Box 8068
Moscow, ID 83843

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APPENDIX 4. SPECIES OF GREATEST CONSERVATION NEED; CONSERVATION RANKING DESCRIPTIONS

Global Rank (GRANK) and State Rank (SRANK) - Idaho Natural Heritage Program

The network of Natural Heritage Programs and Conservation Data Centers--which currently consists of installations in all 50 states, several Canadian provinces, and several Latin American and Caribbean countries--ranks the rangewide (GRANK or global rank) and state (SRANK or state rank) status of plants, animals, and plant communities on a scale of 1 to 5. The rank is primarily based on the number of known occurrences, but other factors such as habitat quality, estimated number of individuals, narrowness of range of habitat, trends in populations and habitat, threats to the element, and other factors are also considered. The ranking system is meant to exist alongside national and state rare species lists because these lists often include additional criteria (e.g., recovery potential, depth of knowledge) that go beyond assessing threats to extinction.

Components of Ranks:

G = Global rank indicator; denotes rank based on rangewide status.

T = Trinomial rank indicator; denotes global status of infraspecific taxa.

S = State rank indicator; denotes rank based on status within Idaho.

1 = Critically imperiled because of extreme rarity or because some factor of its biology makes it especially vulnerable to extinction (typically 5 or fewer occurrences).

2 = Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (typically 6 to 20 occurrences).

3 = Rare or uncommon but not imperiled (typically 21 to 100 occurrences).

4 = Not rare and apparently secure, but with cause for long-term concern (usually more than 100 occurrences).

5 = Demonstrably widespread, abundant, and secure.

U = Unrankable.

H = Historical occurrence (i.e., formerly part of the native biota; implied expectation that it might be rediscovered or possibly extinct).

X = Presumed extinct or extirpated.

Q = Indicates uncertainty about taxonomic status.

? = Uncertainty exists about the stated rank.

NR = Not ranked.

NA = Conservation status rank is not applicable.

Examples of Use:

G4T2 = Species is apparently secure rangewide, but this particular subspecies or variety is imperiled.

S2S3= Uncertainty exists whether the species or subspecies should be ranked S2 or S3.

State Ranks Specific to Long Distance Migrants (Bats and Birds):

A = Accidental (occurring only once or a few times) or casual (occurring more regularly although not every year) in Idaho; a few of these species might have bred on one or more of the occasions when they were recorded.

B = Breeding population.

M = Only applies when migrant occurs in an irregular, transitory, and dispersed manner. Occurrences cannot be defined from year-to-year.

N = Nonbreeding population.

Examples of Use:

S4N = Fairly common winter resident.

S1B,S5N = Rare breeder but a common winter resident.

S2B,SMN = Rare breeder and uncommon spring and fall transient with lesser numbers remaining as local and irregular (in location) winter residents.

Sources: Accessed April 24, 2012.